# FCC Test Report

# (Part 22 – CDMA BC0, GSM, WCDMA B5, LTE B5/B26)

| | |
|---|---|
| **Report No.:** | RFBFLF-WTW-P21010278-9 |
| **FCC ID:** | MSQI007D |
| **Test Model:** | ASUS_I007D |
| **Received Date:** | Jan. 04, 2021 |
| **Test Date:** | Jan. 04 ~ Apr. 01, 2021 |
| **Issued Date:** | Apr. 01, 2021 |
| **Applicant:** | ASUSTeK COMPUTER INC. |
| **Address:** | 1F., No. 15, Lide Rd., Beitou Dist., Taipei City 112, Taiwan |
| **Issued By:** | Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories |
| **Lab Address:** | No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan |
| **Test Location:** | No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN |
| **FCC Registration / Designation Number:** | 788550 / TW0003 |

Testing Laboratory
2021

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**Release Control Record**

| Issue No. | Description | Date Issued |
|---|---|---|
| RFBFLF-WTW-P21010278-9 | Original release | Apr. 01, 2021 |

## 1 Certificate of Conformity

| | |
|---|---|
| **Product:** | EXP21 Smartphone |
| **Brand:** | ASUS |
| **Test Model:** | ASUS_I007D |
| **Sample Status:** | Engineering sample |
| **Applicant:** | ASUSTeK COMPUTER INC. |
| **Test Date:** | Jan. 04 ~ Apr. 01, 2021 |
| **Standards:** | FCC Part 22, Subpart H |

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

**Prepared by :** Celine Chou , **Date:** Apr. 01, 2021

Celine Chou / Senior Specialist

**Approved by :** Bruce Chen , **Date:** Apr. 01, 2021

Bruce Chen / Senior Project Engineer

## 2 Summary of Test Results

| Applied Standard: FCC Part 22 & Part 2 | | | |
|---|---|---|---|
| FCC Clause | Test Item | Result | Remarks |
| 2.1046<br>22.913 (a) | Effective radiated power | Pass | Meet the requirement of limit. |
| 2.1047 | Modulation Characteristics | Pass | Meet the requirement |
| 22.913 (d) | Peak To Average Ratio | Pass | Meet the requirement of limit. |
| 2.1055<br>22.355 | Frequency Stability | Pass | Meet the requirement of limit. |
| 2.1049 | Occupied Bandwidth | Pass | Meet the requirement of limit. |
| 22.917 | Band Edge Measurements | Pass | Meet the requirement of limit. |
| 2.1051<br>22.917 | Conducted Spurious Emissions | Pass | Meet the requirement of limit. |
| 2.1053<br>22.917 | Radiated Spurious Emissions | Pass | Meet the requirement of limit.<br>Minimum passing margin is -20.60dB at 36.79MHz. |

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

### 2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

| Measurement | Frequency | Expanded Uncertainty (k=2) (±) |
|---|---|---|
| Radiated Emissions up to 1 GHz | 9kHz ~ 30MHz | 3.04 dB |
| | 30MHz ~ 200MHz | 3.59 dB |
| | 200MHz ~1000MHz | 3.60 dB |
| Radiated Emissions above 1 GHz | 1GHz ~ 18GHz | 2.29 dB |
| | 18GHz ~ 40GHz | 2.29 dB |

## 2.2 Test Site and Instruments

| Description & Manufacturer | Model No. | Serial No. | Cal. Date | Cal. Due |
|---|---|---|---|---|
| Test Receiver<br>KEYSIGHT | N9038A | MY55420137 | Apr. 16, 2020 | Apr. 15, 2021 |
| Spectrum Analyzer<br>ROHDE & SCHWARZ | FSP40 | 100039 | Jun. 12, 2020 | Jun. 11, 2021 |
| Spectrum Analyzer<br>ROHDE & SCHWARZ | FSW43 | 101866 | Dec. 14, 2020 | Dec. 13, 2021 |
| MXG Vector signal generator<br>Agilent | N5182B | MY53050430 | Nov. 25, 2020 | Nov. 24, 2021 |
| Radio Communication Analyzer<br>Anritsu | MT8821C | 6261806803 | Jan. 18, 2020 | Jan. 17, 2021 |
| | | | Jan. 22, 2021 | Jan. 21, 2022 |
| Universal Radio Communication Tester<br>R&S | CMU200 | 101095 | Nov. 18, 2020 | Nov. 17, 2021 |
| HORN Antenna<br>SCHWARZBECK | BBHA 9120D | 9120D-969 | Nov. 22, 2020 | Nov. 21, 2021 |
| BILOG Antenna<br>SCHWARZBECK | VULB9168 | 9168-160 | Nov. 06, 2020 | Nov. 05, 2021 |
| HORN Antenna<br>SCHWARZBECK | BBHA 9120 D | 9120D-1169 | Nov. 22, 2020 | Nov. 21, 2021 |
| HORN Antenna<br>SCHWARZBECK | BBHA 9170 | BBHA9170241 | Nov. 22, 2020 | Nov. 21, 2021 |
| Preamplifier<br>Agilent<br>(Below 1GHz) | 8447D | 2944A10638 | Jun. 08, 2020 | Jun. 07, 2021 |
| Preamplifier<br>Agilent<br>(Above 1GHz) | 8449B | 3008A02367 | Feb. 18, 2020 | Feb. 17, 2021 |
| | | | Feb. 17, 2021 | Feb. 16, 2022 |
| RF signal cable<br>HUBER+SUHNER&EMCI | SUCOFLEX 104 & EMC104-SM-SM8000 | CABLE-CH9-02 (248780+171006) | Jan. 18, 2020 | Jan. 17, 2021 |
| | | | Jan. 16, 2021 | Jan. 15, 2022 |
| RF signal cable<br>HUBER+SUHNER | SUCOFLEX 104 | CABLE-CH9-(250795/4) | Jan. 18, 2020 | Jan. 17, 2021 |
| | | | Jan. 16, 2021 | Jan. 15, 2022 |
| RF signal cable<br>Woken | 8D-FB | Cable-CH9-01 | Jun. 08, 2020 | Jun. 07, 2021 |
| Software<br>BV ADT | ADT_Radiated_V7.6.15.9.5 | NA | NA | NA |
| Antenna Tower<br>EMCO | 2070/2080 | 512.835.4684 | NA | NA |
| Turn Table<br>EMCO | 2087-2.03 | NA | NA | NA |
| Antenna Tower &Turn<br>BV ADT | AT100 | AT93021705 | NA | NA |
| Turn Table<br>BV ADT | TT100 | TT93021705 | NA | NA |
| Turn Table Controller<br>BV ADT | SC100 | SC93021705 | NA | NA |
| Boresight Antenna Fixture | FBA-01 | FBA-SIP01 | NA | NA |
| Standard Temperature And Humidity Chamber<br>GIANT FORCE | GTH-120-40-CP-AR | MAA1306-019 | Sep. 10, 2020 | Sep. 09, 2021 |

| Description & Manufacturer | Model No. | Serial No. | Cal. Date | Cal. Due |
|---|---|---|---|---|
| JFW 20dB attenuation | 50HF-020-SMA | NA | NA | NA |
| True RMS Clamp Meter Fluke | 325 | 31130711WS | Jun. 06, 2020 | Jun. 05, 2021 |
| DC power supply Keysight | U8002A | MY56330015 | NA | NA |

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 9.

## 3 General Information

### 3.1 General Description of EUT

| | | |
|---|---|---|
| Product | EXP21 Smartphone | |
| Brand | ASUS | |
| Test Model | ASUS_I007D | |
| Sample Status | Engineering sample | |
| Power Supply Rating | 7.74 Vdc (Battery)<br>5 Vdc / 9 Vdc / 12 Vdc / 15Vdc / 20Vdc (Adapter) | |
| Modulation Type | CDMA BC0: CDMA, EVDO, 1xEVDO<br>GSM, GPRS: GMSK<br>EDGE: 8PSK<br>WCDMA: BPSK, QPSK<br>HSDPA: BPSK<br>HSUPA: QPSK<br>LTE: QPSK, 16QAM, 64QAM, 256QAM | |
| Operating Frequency | CDMA BC0 | 824.73MHz ~ 848.28MHz |
| | GSM/GPRS/EDGE | 824.2MHz ~ 848.8MHz |
| | WCDMA Band 5 | 826.4MHz ~ 846.6MHz |
| | LTE Band 5 (Channel Bandwidth 1.4MHz) | 824.7MHz ~ 848.3MHz |
| | LTE Band 5 (Channel Bandwidth 3MHz) | 825.5MHz ~ 847.5MHz |
| | LTE Band 5 (Channel Bandwidth 5MHz) | 826.5MHz ~ 846.5MHz |
| | LTE Band 5 (Channel Bandwidth 10MHz) | 829.0MHz ~ 844.0MHz |
| | LTE Band 26 (Channel Bandwidth 1.4MHz) | 824.7MHz ~ 848.3MHz |
| | LTE Band 26 (Channel Bandwidth 3MHz) | 825.5MHz ~ 847.5MHz |
| | LTE Band 26 (Channel Bandwidth 5MHz) | 826.5MHz ~ 846.5MHz |
| | LTE Band 26 (Channel Bandwidth 10MHz) | 829.0MHz ~ 844.0MHz |
| | LTE Band 26 (Channel Bandwidth 15MHz) | 831.5MHz ~ 841.5MHz |

| | | | | | |
|---|---|---|---|---|---|
| Max. ERP Power | CDMA BC0 | 97.949mW (19.91dBm) | | | |
| | GSM | 785.236mW (28.95dBm) | | | |
| | WCDMA Band 5 | 102.094mW (20.09dBm) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| | LTE Band 5 (Channel Bandwidth 1.4MHz) | 120.781mW (20.82dBm) | 96.605mW (19.85dBm) | 72.611mW (18.61dBm) | 35.810mW (15.54dBm) |
| | LTE Band 5 (Channel Bandwidth 3MHz) | 120.781mW (20.82dBm) | 97.724mW (19.90dBm) | 70.958mW (18.51dBm) | 34.041mW (15.32dBm) |
| | LTE Band 5 (Channel Bandwidth 5MHz) | 121.339mW (20.84dBm) | 97.499mW (19.89dBm) | 71.945mW (18.57dBm) | 36.392mW (15.61dBm) |
| | LTE Band 5 (Channel Bandwidth 10MHz) | 123.595mW (20.92dBm) | 98.628mW (19.94dBm) | 73.621mW (18.67dBm) | 37.584mW (15.75dBm) |
| | LTE Band 26 (Channel Bandwidth 1.4MHz) | 118.850mW (20.75dBm) | 93.972mW (19.73dBm) | 73.961mW (18.69dBm) | 35.156mW (15.46dBm) |
| | LTE Band 26 (Channel Bandwidth 3MHz) | 119.124mW (20.76dBm) | 93.972mW (19.73dBm) | 73.961mW (18.69dBm) | 34.914mW (15.43dBm) |
| | LTE Band 26 (Channel Bandwidth 5MHz) | 118.850mW (20.75dBm) | 92.045mW (19.64dBm) | 73.621mW (18.67dBm) | 33.729mW (15.28dBm) |
| | LTE Band 26 (Channel Bandwidth 10MHz) | 121.060mW (20.83dBm) | 94.189mW (19.74dBm) | 74.302mW (18.71dBm) | 35.727mW (15.53dBm) |
| | LTE Band 26 (Channel Bandwidth 15MHz) | 122.462mW (20.88dBm) | 94.842mW (19.77dBm) | 75.336mW (18.77dBm) | 34.119mW (15.33dBm) |
| Emission Designator | CDMA BC0 | 1M27F9W | | | |
| | GSM/GPRS | 259KGXW | | | |
| | EDGE | 270KG7W | | | |
| | WCDMA Band 5 | 4M15F9W | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| | LTE Band 5 (Channel Bandwidth 1.4MHz) | 1M09G7D | 1M09D7W | 1M09D7W | 1M09D7W |
| | LTE Band 5 (Channel Bandwidth 3MHz) | 2M70G7D | 2M69D7W | 2M70D7W | 2M70D7W |
| | LTE Band 5 (Channel Bandwidth 5MHz) | 4M49G7D | 4M49D7W | 4M50D7W | 4M49D7W |
| | LTE Band 5 (Channel Bandwidth 10MHz) | 8M97G7D | 8M97D7W | 8M97D7W | 8M96D7W |
| | LTE Band 26 (Channel Bandwidth 1.4MHz) | 1M09G7D | 1M09D7W | 1M09D7W | 1M09D7W |
| | LTE Band 26 (Channel Bandwidth 3MHz) | 2M70G7D | 2M70D7W | 2M70D7W | 2M70D7W |
| | LTE Band 26 (Channel Bandwidth 5MHz) | 4M49G7D | 4M49D7W | 4M50D7W | 4M49D7W |
| | LTE Band 26 (Channel Bandwidth 10MHz) | 8M97G7D | 8M97D7W | 8M97D7W | 8M96D7W |
| | LTE Band 26 (Channel Bandwidth 15MHz) | 13M5G7D | 13M4D7W | 13M5D7W | 13M5D7W |
| Antenna Type | Refer to Note as below | | | | |
| Antenna Connector | Refer to Note as below | | | | |
| Accessory Device | Refer to Note as below | | | | |
| Cable Supplied | Refer to Note as below | | | | |

Note:

1. The EUT contains following accessory devices.

| Product | Brand | Model | Description |
|---|---|---|---|
| Battery | SCUD | C21P2002 | Rating: 7.74Vdc, 15.2Wh |
| Adapter | AOHAI | A320Q-200325C-US | I/P: 100-240Vac, 50/60Hz,1.5A<br>O/P: 5Vdc, 3A; 9Vdc, 3A; 12Vdc, 3A; 15Vdc, 3A; 20Vdc, 3.25A |
| Type A to Type C USB Cable | Luxshare | LA9U2026-CS-R | 0.5m |
| Type C to Type C Cable | Luxshare | LA9UC006-CS-R | 1.2m |
| Bluetooth Earphone | Bang & Olufsen | EQ Earbud R | FCC ID: TTUBEOPLAYEQR<br>IC: 3775B-BEOPLAYEQR |
| | | EQ Earbud L | FCC ID: TTUBEOPLAYEQL<br>IC: 3775B-BEOPLAYEQL |
| Bluetooth Earphone Charging Case | Bang & Olufsen | EQ Charging case | I/P: 5Vdc/500mA<br>O/P: 5Vdc/ R170mA; L170mA |

2. The following antennas were provided to the EUT.

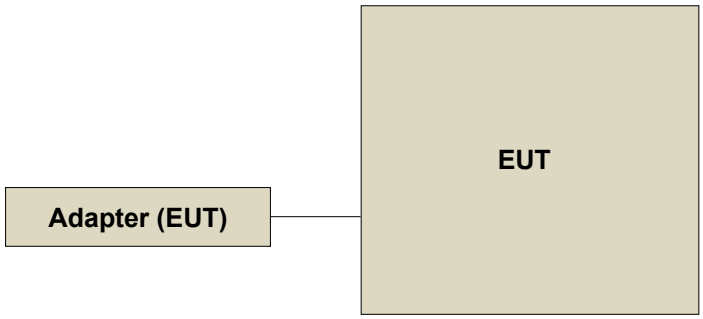
| Ant. No. | Brand | Model | Ant. Type | Connecter | Frequency Range |
|---|---|---|---|---|---|
| Ant 0 | ASUS | ZS675KW | PIFA | LCP+Ipex | 610-960MHz, 1710-2690MHz |
| Ant 1 | ASUS | ZS675KW | PIFA | LCP+Ipex | 1427-1510MHz, 1710-2690MHz |
| Ant 2 | ASUS | ZS675KW | PIFA | LCP+Ipex | 610-960MHz, 1427-1510MHz, 1710-2690MHz |
| Ant 3 | INPAQ | ZS675KW | PIFA | Ipex | 1575-1610MHz, 2400-2500MHz, 5150-5850MHz, 5925-7125MHz |
| Ant 4 | INPAQ | ZS675KW | PIFA | Ipex | 1176±10MHz, 2400-2500MHz, 5150-5850MHz, 5925-7125MHz |
| Ant 5 | INPAQ | ZS675KW | PIFA | LCP+Ipex | 3300-4000MHz, 4400-5000MHz |
| Ant 6 | INPAQ | ZS675KW | PIFA | Ipex | 1427-1510MHz, 2400-2500MHz, 5150-5850MHz, 5925-7125MHz |
| Ant 7 | INPAQ | ZS675KW | PIFA | LCP+Ipex | 3300-4000MHz, 4400-5000MHz |
| Ant 8 | ASUS | ZS675KW | PIFA | LCP+Ipex | 1427-1510MHz, 1710-2690MHz |
| Ant 9 | ASUS | ZS675KW | PIFA | LCP+Ipex | 1710-2690MHz |
| Ant 10 | INPAQ | ZS675KW | PIFA | Ipex | 3300-4000MHz, 4400-5000MHz |
| Ant 11 | INPAQ | ZS675KW | PIFA | Ipex | 3300-4000MHz, 4400-5000MHz |

| 2G / 3G Band | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Band | Freq. Range (MHz) | Gain (dBi) | | | | | | | | | | |
| | | Ant. 0 | Ant. 1 | Ant. 2 | Ant. 3 | Ant. 4 | Ant. 5 | Ant. 6 | Ant. 7 | Ant. 8 | Ant. 9 | Ant. 10 | Ant. 11 |
| GSM-850 | 824 ~ 849 | -1.891 | | -4.526 | | | | | | | | | |
| GSM-1900 | 1850 ~ 1910 | | -1.887 | -1.394 | | | | | | -2.89579 | | | |
| WCDMA B2 | 1850 ~ 1910 | | -1.887 | -1.394 | | | | | | -2.89579 | | | |
| WCDMA B4 | 1710 ~ 1755 | | -2.884 | -3.228 | | | | | | -3.13552 | | | |
| WCDMA B5 | 824 ~ 849 | -1.891 | | -4.526 | | | | | | | | | |
| CDMA BC0 | 815 ~ 849 | -1.891 | | -4.526 | | | | | | | | | |
| CDMA BC1 | 1850 ~ 1910 | | -1.887 | -1.394 | | | | | | -2.89579 | | | |
| CDMA BC10 | 806 ~ 901 | -1.891 | | -4.526 | | | | | | | | | |

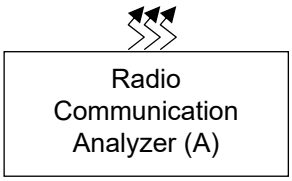
| LTE Band | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Band | Freq. Range (MHz) | Gain (dBi) | | | | | | | | | | |
| | | Ant. 0 | Ant. 1 | Ant. 2 | Ant. 3 | Ant. 4 | Ant. 5 | Ant. 6 | Ant. 7 | Ant. 8 | Ant. 9 | Ant. 10 | Ant. 11 |
| LTE B2 | 1850 ~ 1910 | | -1.887 | -1.394 | | | | | | -2.89579 | -1.804 | | |
| LTE B4 | 1710 ~ 1755 | | -2.884 | -3.228 | | | | | | -3.13552 | -1.706 | | |
| LTE B5 | 824 ~ 849 | -1.891 | | -4.526 | | | | | | | | | |
| LTE B7 | 2500 ~ 2570 | | 0.185 | -0.657 | | | | | | -0.50837 | -1.117 | | |
| LTE B12 | 698 ~ 716 | -2.135 | | -4.343 | | | | | | | | | |
| LTE B13 | 777 ~ 787 | -4.37 | | -8.13 | | | | | | | | | |
| LTE B14 | 788 ~ 798 | -4.37 | | -7.931 | | | | | | | | | |
| LTE B17 | 704 ~ 716 | -2.135 | | -4.343 | | | | | | | | | |
| LTE B25 | 1850 ~ 1915 | | -1.887 | -1.394 | | | | | | -2.89579 | | | |
| LTE B26 | 814 ~ 849 | -1.891 | | -4.526 | | | | | | | | | |
| LTE B30 | 2305 ~ 2315 | | -1.326 | -2.669 | | | | | | -1.28433 | | | |
| LTE B66 | 1710 ~ 1780 | | -2.884 | -2.478 | | | | | | -3.0668 | -1.685 | | |
| LTE B71 | 663 ~ 698 | -5.741 | | -7.388 | | | | | | | | | |
| T-LTE B38 | 2570 ~ 2620 | | 0.724 | -0.912 | | | | | | -0.59557 | | | |
| T-LTE B40 | 2300 ~ 2400 | | -1.326 | -2.669 | | | | | | -1.28433 | | | |
| T-LTE B41 | 2496 ~ 2690 | | 1.143 | -0.657 | | | | | | -0.59557 | | | |
| T-LTE B42 | 3400 ~ 3600 | | | | | | 0.313 | | 0.5277 | | | -2.493 | -0.35195 |
| T-LTE B43 | 3600 ~ 3800 | | | | | | -0.434 | | 0.5277 | | | -0.477 | -0.161 |
| T-LTE B48 | 3550 ~ 3700 | | | | | | -0.434 | | 0.5277 | | | -0.477 | -0.161 |
| 5G FR1 Band | | | | | | | | | | | | | |
| Band | Freq. Range (MHz) | Gain (dBi) | | | | | | | | | | |
| | | Ant. 0 | Ant. 1 | Ant. 2 | Ant. 3 | Ant. 4 | Ant. 5 | Ant. 6 | Ant. 7 | Ant. 8 | Ant. 9 | Ant. 10 | Ant. 11 |
| n2 | 1850 ~ 1910 | | -1.887 | -1.394 | | | | | | -2.89579 | -1.804 | | |
| n5 | 824 ~ 849 | -1.891 | | -4.526 | | | | | | | | | |
| n7 | 2500 ~ 2570 | | 0.185 | -0.657 | | | | | | -0.50837 | -1.117 | | |
| n12 | 699 ~ 716 | -2.135 | | -4.343 | | | | | | | | | |
| n13 | 777 ~ 787 | -4.37 | | -8.13 | | | | | | | | | |
| n14 | 788 ~ 798 | -4.37 | | -7.931 | | | | | | | | | |
| n25 | 1850 ~ 1915 | | -1.887 | -1.394 | | | | | | -2.89579 | -1.627 | | |
| n26 | 814 ~ 849 | -1.891 | | -4.526 | | | | | | | | | |
| n30 | 2305 ~ 2315 | | -1.326 | -2.669 | | | | | | -1.28433 | | | |
| n38 | 2570 ~ 2620 | | 0.724 | -0.912 | | | | | | -0.59557 | -1.3 | | |
| n41 | 2496 ~ 2690 | | 1.143 | -0.657 | | | | | | -0.59557 | -0.076 | | |
| n66 | 1710 ~ 1780 | | -2.884 | -2.478 | | | | | | -3.0668 | -1.685 | | |
| n71 | 663 ~ 698 | -5.741 | | -7.388 | | | | | | | | | |
| n77 | 3300 ~ 4200 | | | | | | 0.313 | | 0.5277 | | | 2.017 | 0.19902 |
| n78 | 3300 ~ 3800 | | | | | | 0.313 | | 0.5277 | | | 2.017 | -0.161 |

* The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

## 3.2 Configuration of System under Test




Remote site




### 3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| ID | Product | Brand | Model No. | Serial No. | FCC ID | Remarks |
|---|---|---|---|---|---|---|
| A. | Radio Communication Analyzer | Anritsu | MT8821C | 6261806803 | NA | For GSM, WCDMA, LTE |
| | | R&S | CMU200 | 101095 | | For CMDA |

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

### 3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The worst case was found when positioned as the table below. Following channel(s) was (were) selected for the final test as listed below:

| Band | Radiated Emission |
|---|---|
| CDMA | Y-plane |
| GSM | Y-plane |
| WCDMA Band 5 | Y-plane |
| LTE Band 5 | Y-plane |
| LTE Band 26 | Y-plane |

CDMA

| EUT Configure Mode | Test Item | Available Channel | Tested Channel | Mode |
|---|---|---|---|---|
| - | ERP | 1014 to 776 | 1014 (824.73MHz), 384 (836.52MHz), 776 (848.28MHz) | CDMA |
| - | Modulation Characteristics | 1014 to 776 | 384 (836.52MHz) | CDMA |
| - | Frequency Stability | 1014 to 776 | 1014 (824.73MHz), 776 (848.28MHz) | CDMA |
| - | Occupied Bandwidth | 1014 to 776 | 1014 (824.73MHz), 384 (836.52MHz), 776 (848.28MHz) | CDMA |
| - | Band Edge | 1014 to 776 | 1014 (824.73MHz), 776 (848.28MHz) | CDMA |
| - | Peak To Average Ratio | 1014 to 776 | 1014 (824.73MHz), 384 (836.52MHz), 776 (848.28MHz) | CDMA |
| - | Conducted Emission | 1014 to 776 | 1014 (824.73MHz), 384 (836.52MHz), 776 (848.28MHz) | CDMA |
| - | Radiated Emission Below 1GHz | 1014 to 776 | 384 (836.52MHz) | CDMA |
| - | Radiated Emission Above 1GHz | 1014 to 776 | 1014 (824.73MHz), 384 (836.52MHz), 776 (848.28MHz) | CDMA |

Note: For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.

GSM Mode

| EUT Configure Mode | Test Item | Available Channel | Tested Channel | Mode |
|---|---|---|---|---|
| - | ERP | 128 to 251 | 128 (824.2MHz),<br>189 (836.4MHz),<br>251 (848.8MHz) | GSM, GPRS, EDGE |
| - | Modulation Characteristics | 128 to 251 | 189 (836.4MHz) | GSM, GPRS, EDGE |
| - | Frequency Stability | 128 to 251 | 128 (824.2MHz),<br>251 (848.8MHz) | GSM, EDGE |
| - | Occupied Bandwidth | 128 to 251 | 128 (824.2MHz),<br>189 (836.4MHz),<br>251 (848.8MHz) | GSM, GPRS, EDGE |
| - | Band Edge | 128 to 251 | 128(824.2MHz),<br>251(848.8MHz) | GSM, GPRS, EDGE |
| - | Peak To Average Ratio | 128 to 251 | 128 (824.2MHz),<br>189 (836.4MHz),<br>251 (848.8MHz) | GSM, GPRS, EDGE |
| - | Conducted Emission | 128 to 251 | 128 (824.2MHz),<br>189 (836.4MHz),<br>251 (848.8MHz) | GSM, GPRS, EDGE |
| - | Radiated Emission<br>Below 1GHz | 128 to 251 | 189 (836.4MHz) | GSM, EDGE |
| - | Radiated Emission<br>Above 1GHz | 128 to 251 | 128 (824.2MHz),<br>189 (836.4MHz),<br>251 (848.8MHz) | GSM, EDGE |

Note: For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.

WCDMA Band 5

| EUT Configure Mode | Test Item | Available Channel | Tested Channel | Mode |
|---|---|---|---|---|
| - | ERP | 4132 to 4233 | 4132 (826.4MHz), 4182 (836.4MHz), 4233 (846.6MHz) | WCDMA, HSDPA, HSUPA |
| - | Modulation Characteristics | 4132 to 4233 | 4182 (836.4MHz) | WCDMA, HSDPA, HSUPA |
| - | Frequency Stability | 4132 to 4233 | 4132 (826.4MHz), 4233 (846.6MHz) | WCDMA |
| - | Occupied Bandwidth | 4132 to 4233 | 4132 (826.4MHz), 4182 (836.4MHz), 4233 (846.6MHz) | WCDMA, HSDPA, HSUPA |
| - | Band Edge | 4132 to 4233 | 4132 (826.4MHz), 4233 (846.6MHz) | WCDMA, HSDPA, HSUPA |
| - | Peak To Average Ratio | 4132 to 4233 | 4132 (826.4MHz), 4182 (836.4MHz), 4233 (846.6MHz) | WCDMA, HSDPA, HSUPA |
| - | Conducted Emission | 4132 to 4233 | 4132 (826.4MHz), 4182 (836.4MHz), 4233 (846.6MHz) | WCDMA, HSDPA, HSUPA |
| - | Radiated Emission Below 1GHz | 4132 to 4233 | 4182 (836.4MHz) | WCDMA |
| - | Radiated Emission Above 1GHz | 4132 to 4233 | 4132 (826.4MHz), 4182 (836.4MHz), 4233 (846.6MHz) | WCDMA |

Note: For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.

LTE Band 5

| EUT Configure Mode | Test item | Available channel | Tested channel | Channel Bandwidth | Modulation | Mode |
|---|---|---|---|---|---|---|
| - | ERP | 20407 to 20643 | 20407 (824.7MHz), 20525 (836.5MHz), 20643 (848.3MHz) | 1.4MHz | QPSK / 16QAM / 64QAM / 256QAM | 1 RB / 0 RB Offset<br>1 RB / 2 RB Offset<br>1 RB / 5 RB Offset<br>3 RB / 0 RB Offset<br>3 RB / 1 RB Offset<br>3 RB / 3 RB Offset<br>6 RB / 0 RB Offset |
| | | 20415 to 20635 | 20415 (825.5MHz), 20525 (836.5MHz), 20635 (847.5MHz) | 3MHz | QPSK / 16QAM / 64QAM / 256QAM | 1 RB / 0 RB Offset<br>1 RB / 7 RB Offset<br>1 RB / 14 RB Offset<br>8 RB / 0 RB Offset<br>8 RB / 3 RB Offset<br>8 RB / 7 RB Offset<br>15 RB / 0 RB Offset |
| | | 20425 to 20625 | 20425 (826.5MHz), 20525 (836.5MHz), 20625 (846.5MHz) | 5MHz | QPSK / 16QAM / 64QAM / 256QAM | 1 RB / 0 RB Offset<br>1 RB / 12 RB Offset<br>1 RB / 24 RB Offset<br>12 RB / 0 RB Offset<br>12 RB / 6 RB Offset<br>12 RB / 13 RB Offset<br>25 RB / 0 RB Offset |
| | | 20450 to 20600 | 20450 (829.0MHz), 20525 (836.5MHz), 20600 (844.0MHz) | 10MHz | QPSK / 16QAM / 64QAM / 256QAM | 1 RB / 0 RB Offset<br>1 RB / 24 RB Offset<br>1 RB / 49 RB Offset<br>25 RB / 0 RB Offset<br>25 RB / 12 RB Offset<br>25 RB / 25 RB Offset<br>50 RB / 0 RB Offset |
| - | Modulation Characteristics | 20450 to 20600 | 20525 (836.5MHz) | 10MHz | QPSK / 16QAM / 64QAM / 256QAM | 50 RB / 0 RB Offset |
| - | Frequency Stability | 20407 to 20643 | 20407 (824.7MHz), 20643 (848.3MHz) | 1.4MHz | QPSK | 6 RB / 0 RB Offset |
| | | 20415 to 20635 | 20415 (825.5MHz), 20635 (847.5MHz) | 3MHz | QPSK | 15 RB / 0 RB Offset |
| | | 20425 to 20625 | 20425 (826.5MHz), 20625 (846.5MHz) | 5MHz | QPSK | 25 RB / 0 RB Offset |
| | | 20450 to 20600 | 20450 (829.0MHz), 20600 (844.0MHz) | 10MHz | QPSK | 50 RB / 0 RB Offset |
| - | Occupied Bandwidth | 20407 to 20643 | 20407 (824.7MHz), 20525 (836.5MHz), 20643 (848.3MHz) | 1.4MHz | QPSK / 16QAM / 64QAM / 256QAM | 6 RB / 0RB Offset |
| | | 20415 to 20635 | 20415 (825.5MHz), 20525 (836.5MHz), 20635 (847.5MHz) | 3MHz | QPSK / 16QAM / 64QAM / 256QAM | 15 RB / 0RB Offset |
| | | 20425 to 20625 | 20425 (826.5MHz), 20525 (836.5MHz), 20625 (846.5MHz) | 5MHz | QPSK / 16QAM / 64QAM / 256QAM | 25RB / 0RB Offset |
| | | 20450 to 20600 | 20450 (829.0MHz), 20525 (836.5MHz), 20600 (844.0MHz) | 10MHz | QPSK / 16QAM / 64QAM / 256QAM | 50RB / 0RB Offset |

| EUT Configure Mode | Test item | Available channel | Tested channel | Channel Bandwidth | Modulation | Mode |
|---|---|---|---|---|---|---|
| - | Band Edge | 20407 to 20643 | 20407 (824.7MHz), 20643 (848.3MHz) | 1.4MHz | QPSK | 1 RB / 0 RB Offset<br>1 RB / 5 RB Offset<br>6 RB / 0 RB Offset |
| | | 20415 to 20635 | 20415 (825.5MHz), 20635 (847.5MHz) | 3MHz | QPSK | 1 RB / 0 RB Offset<br>1 RB / 14 RB Offset<br>15 RB / 0 RB Offset |
| | | 20425 to 20625 | 20425 (826.5MHz), 20625 (846.5MHz) | 5MHz | QPSK | 1 RB / 0 RB Offset<br>1 RB / 24 RB Offset<br>25 RB / 0 RB Offset |
| | | 20450 to 20600 | 20450 (829.0MHz), 20600 (844.0MHz) | 10MHz | QPSK | 1 RB / 0 RB Offset<br>1 RB / 49 RB Offset<br>50 RB / 0 RB Offset |
| - | Peak to Average Ratio | 20407 to 20643 | 20407 (824.7MHz), 20525 (836.5MHz), 20643 (848.3MHz) | 1.4MHz | QPSK / 16QAM / 64QAM / 256QAM | 3 RB / 1 RB Offset |
| | | 20415 to 20635 | 20415 (825.5MHz), 20525 (836.5MHz), 20635 (847.5MHz) | 3MHz | QPSK / 16QAM / 64QAM / 256QAM | 1 RB / 0 RB Offset |
| | | 20425 to 20625 | 20425 (826.5MHz), 20525 (836.5MHz), 20625 (846.5MHz) | 5MHz | QPSK / 16QAM / 64QAM / 256QAM | 1 RB / 0 RB Offset |
| | | 20450 to 20600 | 20450 (829.0MHz), 20525 (836.5MHz), 20600 (844.0MHz) | 10MHz | QPSK / 16QAM / 64QAM / 256QAM | 1 RB / 0 RB Offset |
| - | Conducted Emission | 20407 to 20643 | 20407 (824.7MHz), 20525 (836.5MHz), 20643 (848.3MHz) | 1.4MHz | QPSK | 3 RB / 1 RB Offset |
| | | 20415 to 20635 | 20415 (825.5MHz), 20525 (836.5MHz), 20635 (847.5MHz) | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | | 20425 to 20625 | 20425 (826.5MHz), 20525 (836.5MHz), 20625 (846.5MHz) | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | | 20450 to 20600 | 20450 (829.0MHz), 20525 (836.5MHz), 20600 (844.0MHz) | 10MHz | QPSK | 1 RB / 0 RB Offset |

| EUT Configure Mode | Test item | Available channel | Tested channel | Channel Bandwidth | Modulation | Mode |
|---|---|---|---|---|---|---|
| - | Radiated Emission Below 1GHz | 20450 to 20600 | 20525 (836.5MHz) | 10MHz | QPSK | 1 RB / 0 RB Offset |
| - | Radiated Emission Above 1GHz | 20407 to 20643 | 20407 (824.7MHz), 20525 (836.5MHz), 20643 (848.3MHz) | 1.4MHz | QPSK | 3 RB / 1 RB Offset |
| | | 20425 to 20625 | 20425 (826.5MHz), 20525 (836.5MHz), 20625 (846.5MHz) | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | | 20450 to 20600 | 20450 (829.0MHz), 20525 (836.5MHz), 20600 (844.0MHz) | 10MHz | QPSK | 1 RB / 0 RB Offset |

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM, 64QAM and 256QAM, measured value of QPSK is higher than 16QAM, 64QAM and 256QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under QPSK mode only.

LTE Band 26

| EUT Configure Mode | Test item | Available channel | Tested channel | Channel Bandwidth | Modulation | Mode |
|---|---|---|---|---|---|---|
| - | ERP | 26797 to 27033 | 26797 (824.7MHz), 26915 (836.5MHz), 27033 (848.3MHz) | 1.4MHz | QPSK / 16QAM / 64QAM / 256QAM | 1 RB / 0 RB Offset<br>1 RB / 2 RB Offset<br>1 RB / 5 RB Offset<br>3 RB / 0 RB Offset<br>3 RB / 1 RB Offset<br>3 RB / 3 RB Offset<br>6 RB / 0 RB Offset |
| | | 26805 to 27025 | 26805 (825.5MHz), 26915 (836.5MHz), 27025 (847.5MHz) | 3MHz | QPSK / 16QAM / 64QAM / 256QAM | 1 RB / 0 RB Offset<br>1 RB / 7 RB Offset<br>1 RB / 14 RB Offset<br>8 RB / 0 RB Offset<br>8 RB / 3 RB Offset<br>8 RB / 7 RB Offset<br>15 RB / 0 RB Offset |
| | | 26815 to 27015 | 26815 (826.5MHz), 26915 (836.5MHz), 27015 (846.5MHz) | 5MHz | QPSK / 16QAM / 64QAM / 256QAM | 1 RB / 0 RB Offset<br>1 RB / 12 RB Offset<br>1 RB / 24 RB Offset<br>12 RB / 0 RB Offset<br>12 RB / 6 RB Offset<br>12 RB / 13 RB Offset<br>25 RB / 0 RB Offset |
| | | 26840 to 26990 | 26840 (829.0MHz), 26915 (836.5MHz), 26990 (844.0MHz) | 10MHz | QPSK / 16QAM / 64QAM / 256QAM | 1 RB / 0 RB Offset<br>1 RB / 24 RB Offset<br>1 RB / 49 RB Offset<br>25 RB / 0 RB Offset<br>25 RB / 12 RB Offset<br>25 RB / 25 RB Offset<br>50 RB / 0 RB Offset |
| | | 26865 to 26965 | 26865 (831.5MHz), 26915 (836.5MHz), 26965 (841.5MHz) | 15MHz | QPSK / 16QAM / 64QAM / 256QAM | 1 RB / 0 RB Offset<br>1 RB / 37 RB Offset<br>1 RB / 74 RB Offset<br>36 RB / 0 RB Offset<br>36 RB / 19 RB Offset<br>36 RB / 39 RB Offset<br>75 RB / 0 RB Offset |
| - | Modulation Characteristics | 26865 to 26965 | 26915 (836.5MHz) | 15MHz | QPSK / 16QAM / 64QAM / 256QAM | 75 RB / 0 RB Offset |
| - | Frequency Stability | 26797 to 27033 | 26797 (824.7MHz), 27033 (848.3MHz) | 1.4MHz | QPSK | 6 RB / 0 RB Offset |
| | | 26805 to 27025 | 26805 (825.5MHz), 27025 (847.5MHz) | 3MHz | QPSK | 15 RB / 0 RB Offset |
| | | 26815 to 27015 | 26815 (826.5MHz), 27015 (846.5MHz) | 5MHz | QPSK | 25 RB / 0 RB Offset |
| | | 26840 to 26990 | 26840 (829.0MHz), 26990 (844.0MHz) | 10MHz | QPSK | 50 RB / 0 RB Offset |
| | | 26865 to 26965 | 26865 (831.5MHz), 26965 (841.5MHz) | 15MHz | QPSK | 75 RB / 0 RB Offset |

| EUT Configure Mode | Test item | Available channel | Tested channel | Channel Bandwidth | Modulation | Mode |
|---|---|---|---|---|---|---|
| - | Occupied Bandwidth | 26797 to 27033 | 26797 (824.7MHz), 26915 (836.5MHz), 27033 (848.3MHz) | 1.4MHz | QPSK / 16QAM / 64QAM / 256QAM | 6 RB / 0 RB Offset |
| | | 26805 to 27025 | 26805 (825.5MHz), 26915 (836.5MHz), 27025 (847.5MHz) | 3MHz | QPSK / 16QAM / 64QAM / 256QAM | 15 RB / 0 RB Offset |
| | | 26815 to 27015 | 26815 (826.5MHz), 26915 (836.5MHz), 27015 (846.5MHz) | 5MHz | QPSK / 16QAM / 64QAM / 256QAM | 25 RB / 0 RB Offset |
| | | 26840 to 26990 | 26840 (829.0MHz), 26915 (836.5MHz), 26990 (844.0MHz) | 10MHz | QPSK / 16QAM / 64QAM / 256QAM | 50 RB / 0 RB Offset |
| | | 26865 to 26965 | 26865 (831.5MHz), 26915 (836.5MHz), 26965 (841.5MHz) | 15MHz | QPSK / 16QAM / 64QAM / 256QAM | 75 RB / 0 RB Offset |
| - | Band Edge | 26797 to 27033 | 26797 (824.7MHz), 27033 (848.3MHz) | 1.4MHz | QPSK | 1 RB / 0 RB Offset<br>1 RB / 5 RB Offset<br>6 RB / 0 RB Offset |
| | | 26805 to 27025 | 26805 (825.5MHz), 27025 (847.5MHz) | 3MHz | QPSK | 1 RB / 0 RB Offset<br>1 RB / 14 RB Offset<br>15 RB / 0 RB Offset |
| | | 26815 to 27015 | 26815 (826.5MHz), 27015 (846.5MHz) | 5MHz | QPSK | 1 RB / 0 RB Offset<br>1 RB / 24 RB Offset<br>25 RB / 0 RB Offset |
| | | 26840 to 26990 | 26840 (829.0MHz), 26990 (844.0MHz) | 10MHz | QPSK | 1 RB / 0 RB Offset<br>1 RB / 49 RB Offset<br>50 RB / 0 RB Offset |
| | | 26865 to 26965 | 26865 (831.5MHz), 26965 (841.5MHz) | 15MHz | QPSK | 1 RB / 0 RB Offset<br>1 RB / 74 RB Offset<br>75 RB / 0 RB Offset |
| - | Peak to Average Ratio | 26797 to 27033 | 26797 (824.7MHz), 26915 (836.5MHz), 27033 (848.3MHz) | 1.4MHz | QPSK / 16QAM / 64QAM / 256QAM | 3 RB / 1 RB Offset |
| | | 26805 to 27025 | 26805 (825.5MHz), 26915 (836.5MHz), 27025 (847.5MHz) | 3MHz | QPSK / 16QAM / 64QAM / 256QAM | 1 RB / 0 RB Offset |
| | | 26815 to 27015 | 26815 (826.5MHz), 26915 (836.5MHz), 27015 (846.5MHz) | 5MHz | QPSK / 16QAM / 64QAM / 256QAM | 1 RB / 0 RB Offset |
| | | 26840 to 26990 | 26840 (829.0MHz), 26915 (836.5MHz), 26990 (844.0MHz) | 10MHz | QPSK / 16QAM / 64QAM / 256QAM | 1 RB / 0 RB Offset |
| | | 26865 to 26965 | 26865 (831.5MHz), 26915 (836.5MHz), 26965 (841.5MHz) | 15MHz | QPSK / 16QAM / 64QAM / 256QAM | 1 RB / 0 RB Offset |

| EUT Configure Mode | Test item | Available channel | Tested channel | Channel Bandwidth | Modulation | Mode |
|---|---|---|---|---|---|---|
| - | Conducted Emission | 26797 to 27033 | 26797 (824.7MHz), 26915 (836.5MHz), 27033 (848.3MHz) | 1.4MHz | QPSK | 3 RB / 1 RB Offset |
| | | 26805 to 27025 | 26805 (825.5MHz), 26915 (836.5MHz), 27025 (847.5MHz) | 3MHz | QPSK | 1 RB / 0 RB Offset |
| | | 26815 to 27015 | 26815 (826.5MHz), 26915 (836.5MHz), 27015 (846.5MHz) | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | | 26840 to 26990 | 26840 (829.0MHz), 26915 (836.5MHz), 26990 (844.0MHz) | 10MHz | QPSK | 1 RB / 0 RB Offset |
| | | 26865 to 26965 | 26865 (831.5MHz), 26915 (836.5MHz), 26965 (841.5MHz) | 15MHz | QPSK | 1 RB / 0 RB Offset |
| - | Radiated Emission Below 1GHz | 26865 to 26965 | 26915 (836.5MHz) | 15MHz | QPSK | 1 RB / 0 RB Offset |
| - | Radiated Emission Above 1GHz | 26797 to 27033 | 26797 (824.7MHz), 26915 (836.5MHz), 27033 (848.3MHz) | 1.4MHz | QPSK | 3 RB / 1 RB Offset |
| | | 26815 to 27015 | 26815 (826.5MHz), 26915 (836.5MHz), 27015 (846.5MHz) | 5MHz | QPSK | 1 RB / 0 RB Offset |
| | | 26865 to 26965 | 26865 (831.5MHz), 26915 (836.5MHz), 26965 (841.5MHz) | 15MHz | QPSK | 1 RB / 0 RB Offset |

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM, 64QAM and 256QAM, measured value of QPSK is higher than 16QAM, 64QAM and 256QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under QPSK mode only.

Test Condition:

| Test Item | Environmental Conditions | Input Power | Tested By |
|---|---|---|---|
| ERP | 25deg. C, 60%RH | 120Vac, 60Hz | Willy Cheng |
| Modulation Characteristics | 25deg. C, 60%RH | 120Vac, 60Hz | Willy Cheng |
| Frequency Stability | 25deg. C, 60%RH | 7.74Vdc | Willy Cheng |
| Occupied Bandwidth | 25deg. C, 60%RH | 120Vac, 60Hz | Willy Cheng |
| Band Edge | 25deg. C, 60%RH | 120Vac, 60Hz | Willy Cheng |
| Peak To Average Ratio | 25deg. C, 60%RH | 120Vac, 60Hz | Willy Cheng |
| Conducted Emission | 25deg. C, 60%RH | 120Vac, 60Hz | Willy Cheng |
| Radiated Emission | 22deg. C, 66%RH | 120Vac, 60Hz | Rex Wang |

### 3.4 EUT Operating Conditions

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

### 3.5 General Description of Applied Standards and References

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**Test Standard:**

**FCC 47 CFR Part 2**

**FCC 47 CFR Part 22**

**ANSI/TIA/EIA-603-E 2016**

ANSI 63.26-2015

**References Test Guidance:**

**KDB 971168 D01 Power Meas License Digital Systems v03r01**

All test items have been performed and recorded as per the above standards.

# 4 Test Types and Results

## 4.1 Output Power Measurement

### 4.1.1 Limits of Output Power Measurement

Mobile / Portable station are limited to 7 watts e.r.p.

### 4.1.2 Test Procedures

**Conducted Power Measurement:**

The EUT was set up for the maximum power with CDMA, GSM, WCDMA, LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

**Maximum EIRP / ERP**

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation as follows:

$EIRP = P_{Meas} + G_T$

$ERP = P_{Meas} + G_T - 2.15$

where

ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as $P_{Meas}$, e.g., dBm or dBW)

$P_{Meas}$ measured transmitter output power or PSD, in dBm or dBW

$G_T$ gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

### 4.1.3 Test Setup

Conducted Power Measurement:

### 4.1.4 Test Results

**Conducted Output Power (dBm)**

| Band | CDMA2000 BC0 | | |
|---|---|---|---|
| Channel | 1014 | 384 | 776 |
| Frequency | 824.73 | 836.52 | 848.28 |
| RC1+SO55 | 23.89 | 23.86 | 22.84 |
| RC3+SO55 | 23.95 | 23.92 | 22.91 |
| RC3+SO32(+ F-SCH) | 23.94 | 23.88 | 22.86 |
| RC3+SO32(+SCH) | 23.92 | 23.89 | 22.85 |
| RC1+SO3, 1/8 Rate | 23.91 | 23.87 | 22.84 |
| RTAP 153.6 | 23.93 | 23.90 | 22.90 |
| RETAP 4096 | 23.91 | 23.87 | 22.89 |

| Band | GSM850 | | |
|---|---|---|---|
| Channel | 128 | 189 | 251 |
| Frequency | 824.2 | 836.4 | 848.8 |
| GSM | 32.92 | 32.99 | 32.97 |
| GPRS 1Tx Slot | 32.84 | 32.90 | 32.89 |
| GPRS 2Tx Slot | 32.82 | 32.89 | 32.87 |
| GPRS 3Tx Slot | 32.85 | 32.91 | 32.90 |
| GPRS 4Tx Slot | 32.88 | 32.94 | 32.92 |
| EDGE 1Tx Slot (MCS9) | 26.40 | 26.45 | 26.41 |
| EDGE 2Tx Slot (MCS9) | 26.30 | 26.36 | 26.34 |
| EDGE 3Tx Slot (MCS9) | 26.09 | 26.16 | 26.15 |
| EDGE 4Tx Slot (MCS9) | 25.86 | 25.96 | 25.94 |

| Band | WCDMA V | | |
|---|---|---|---|
| TX Channel | 4132 | 4182 | 4233 |
| Rx Channel | 4357 | 4407 | 4458 |
| Frequency | 826.4 | 836.4 | 846.6 |
| RMC 12.2K | 24.11 | 24.13 | 23.99 |
| HSDPA Subtest-1 | 23.34 | 23.27 | 23.22 |
| HSDPA Subtest-2 | 23.33 | 23.26 | 23.21 |
| HSDPA Subtest-3 | 22.84 | 22.77 | 22.72 |
| HSDPA Subtest-4 | 22.87 | 22.80 | 22.75 |
| DC-HSDPA Subtest-1 | 23.26 | 23.19 | 23.14 |
| DC-HSDPA Subtest-2 | 23.25 | 23.18 | 23.13 |
| DC-HSDPA Subtest-3 | 22.76 | 22.69 | 22.64 |
| DC-HSDPA Subtest-4 | 22.79 | 22.72 | 22.67 |
| HSUPA Subtest-1 | 23.18 | 23.11 | 23.06 |
| HSUPA Subtest-2 | 21.13 | 21.06 | 21.01 |
| HSUPA Subtest-3 | 22.18 | 22.11 | 22.06 |
| HSUPA Subtest-4 | 21.14 | 21.07 | 21.02 |
| HSUPA Subtest-5 | 23.21 | 23.14 | 23.09 |

| LTE Band 5 | | | | | | |
|---|---|---|---|---|---|---|
| BW | MCS Index | RB Size | RB Offset | Low | Mid | High |
| | | Channel | | 20450 | 20525 | 20600 |
| | | Frequency (MHz) | | 829 | 836.5 | 844 |
| 10M | QPSK | 1 | 0 | 24.73 | 24.96 | 24.63 |
| | | 1 | 24 | 24.65 | 24.88 | 24.55 |
| | | 1 | 49 | 24.43 | 24.66 | 24.33 |
| | | 25 | 0 | 23.69 | 23.99 | 23.76 |
| | | 25 | 12 | 23.68 | 23.94 | 23.74 |
| | | 25 | 25 | 23.59 | 23.82 | 23.49 |
| | | 50 | 0 | 23.76 | 23.98 | 23.68 |
| 10M | 16QAM | 1 | 0 | 23.69 | 23.98 | 23.76 |
| | | 1 | 24 | 23.71 | 23.97 | 23.76 |
| | | 1 | 49 | 23.44 | 23.61 | 23.34 |
| | | 25 | 0 | 22.76 | 22.99 | 22.81 |
| | | 25 | 12 | 22.75 | 22.92 | 22.65 |
| | | 25 | 25 | 22.60 | 22.77 | 22.50 |
| | | 50 | 0 | 22.68 | 22.95 | 22.77 |
| 10M | 64QAM | 1 | 0 | 22.48 | 22.71 | 22.38 |
| | | 1 | 24 | 22.35 | 22.58 | 22.25 |
| | | 1 | 49 | 21.74 | 21.97 | 21.64 |
| | | 25 | 0 | 21.40 | 21.63 | 21.30 |
| | | 25 | 12 | 21.34 | 21.57 | 21.24 |
| | | 25 | 25 | 20.84 | 21.07 | 20.74 |
| | | 50 | 0 | 20.99 | 21.22 | 20.89 |
| 10M | 256QAM | 1 | 0 | 19.21 | 19.79 | 19.11 |
| | | 1 | 24 | 19.08 | 19.43 | 19.03 |
| | | 1 | 49 | 19.14 | 19.46 | 18.92 |
| | | 25 | 0 | 18.43 | 18.46 | 18.40 |
| | | 25 | 12 | 18.35 | 18.75 | 18.46 |
| | | 25 | 25 | 18.38 | 18.49 | 18.30 |
| | | 50 | 0 | 18.38 | 18.48 | 18.14 |

| LTE Band 5 | | | | | | |
|---|---|---|---|---|---|---|
| BW | MCS Index | RB Size | RB Offset | Low | Mid | High |
| | | Channel | | 20425 | 20525 | 20625 |
| | | Frequency (MHz) | | 826.5 | 836.5 | 846.5 |
| 5M | QPSK | 1 | 0 | 24.65 | 24.88 | 24.58 |
| | | 1 | 12 | 24.56 | 24.82 | 24.47 |
| | | 1 | 24 | 24.37 | 24.66 | 24.25 |
| | | 12 | 0 | 23.69 | 23.91 | 23.76 |
| | | 12 | 6 | 23.64 | 23.85 | 23.66 |
| | | 12 | 13 | 23.58 | 23.77 | 23.41 |
| | | 25 | 0 | 23.71 | 23.92 | 23.58 |
| 5M | 16QAM | 1 | 0 | 23.65 | 23.93 | 23.72 |
| | | 1 | 12 | 23.67 | 23.92 | 23.69 |
| | | 1 | 24 | 23.34 | 23.57 | 23.33 |
| | | 12 | 0 | 22.72 | 22.94 | 22.78 |
| | | 12 | 6 | 22.66 | 22.87 | 22.56 |
| | | 12 | 13 | 22.50 | 22.75 | 22.47 |
| | | 25 | 0 | 22.64 | 22.87 | 22.71 |
| 5M | 64QAM | 1 | 0 | 22.41 | 22.61 | 22.35 |
| | | 1 | 12 | 22.35 | 22.57 | 22.23 |
| | | 1 | 24 | 21.71 | 21.89 | 21.61 |
| | | 12 | 0 | 21.39 | 21.55 | 21.26 |
| | | 12 | 6 | 21.28 | 21.48 | 21.20 |
| | | 12 | 13 | 20.82 | 20.97 | 20.74 |
| | | 25 | 0 | 20.89 | 21.16 | 20.82 |
| 5M | 256QAM | 1 | 0 | 19.06 | 19.48 | 19.36 |
| | | 1 | 12 | 19.22 | 19.65 | 19.03 |
| | | 1 | 24 | 19.00 | 19.39 | 19.08 |
| | | 12 | 0 | 18.12 | 18.46 | 18.33 |
| | | 12 | 6 | 18.21 | 18.59 | 18.16 |
| | | 12 | 13 | 18.37 | 18.58 | 18.29 |
| | | 25 | 0 | 18.47 | 18.44 | 18.08 |

| LTE Band 5 | | | | | | |
|---|---|---|---|---|---|---|
| BW | MCS Index | RB Size | RB Offset | Low | Mid | High |
| | | Channel | | 20415 | 20525 | 20635 |
| | | Frequency (MHz) | | 825.5 | 836.5 | 847.5 |
| 3M | QPSK | 1 | 0 | 24.59 | 24.86 | 24.43 |
| | | 1 | 7 | 24.48 | 24.81 | 24.48 |
| | | 1 | 14 | 24.24 | 24.50 | 24.18 |
| | | 8 | 0 | 23.44 | 23.76 | 23.60 |
| | | 8 | 3 | 23.53 | 23.90 | 23.70 |
| | | 8 | 7 | 23.41 | 23.66 | 23.34 |
| | | 15 | 0 | 23.61 | 23.79 | 23.45 |
| 3M | 16QAM | 1 | 0 | 23.59 | 23.94 | 23.69 |
| | | 1 | 7 | 23.50 | 23.75 | 23.69 |
| | | 1 | 14 | 23.32 | 23.52 | 23.17 |
| | | 8 | 0 | 22.75 | 22.93 | 22.75 |
| | | 8 | 3 | 22.60 | 22.84 | 22.43 |
| | | 8 | 7 | 22.56 | 22.72 | 22.44 |
| | | 15 | 0 | 22.63 | 22.81 | 22.66 |
| 3M | 64QAM | 1 | 0 | 22.43 | 22.55 | 22.25 |
| | | 1 | 7 | 22.20 | 22.41 | 22.09 |
| | | 1 | 14 | 21.69 | 21.86 | 21.47 |
| | | 8 | 0 | 21.33 | 21.52 | 21.17 |
| | | 8 | 3 | 21.23 | 21.35 | 21.09 |
| | | 8 | 7 | 20.77 | 21.00 | 20.66 |
| | | 15 | 0 | 20.80 | 21.09 | 20.82 |
| 3M | 256QAM | 1 | 0 | 19.22 | 19.36 | 18.97 |
| | | 1 | 7 | 19.11 | 19.26 | 19.04 |
| | | 1 | 14 | 18.78 | 19.16 | 18.67 |
| | | 8 | 0 | 18.28 | 18.57 | 18.27 |
| | | 8 | 3 | 18.19 | 18.35 | 18.39 |
| | | 8 | 7 | 18.02 | 18.45 | 18.07 |
| | | 15 | 0 | 18.21 | 18.53 | 18.03 |

| LTE Band 5 | | | | | | |
|---|---|---|---|---|---|---|
| BW | MCS Index | RB Size | RB Offset | Low | Mid | High |
| | | Channel | | 20407 | 20525 | 20643 |
| | | Frequency (MHz) | | 824.7 | 836.5 | 848.3 |
| 1.4M | QPSK | 1 | 0 | 24.59 | 24.76 | 24.46 |
| | | 1 | 2 | 24.55 | 24.78 | 24.54 |
| | | 1 | 5 | 24.28 | 24.61 | 24.23 |
| | | 3 | 0 | 24.64 | 24.85 | 24.68 |
| | | 3 | 1 | 24.61 | 24.86 | 24.72 |
| | | 3 | 3 | 24.47 | 24.67 | 24.32 |
| | | 6 | 0 | 23.63 | 23.88 | 23.48 |
| 1.4M | 16QAM | 1 | 0 | 23.59 | 23.83 | 23.61 |
| | | 1 | 2 | 23.61 | 23.86 | 23.64 |
| | | 1 | 5 | 23.44 | 23.46 | 23.09 |
| | | 3 | 0 | 23.66 | 23.84 | 23.68 |
| | | 3 | 1 | 23.54 | 23.89 | 23.58 |
| | | 3 | 3 | 23.42 | 23.62 | 23.29 |
| | | 6 | 0 | 22.54 | 22.91 | 22.75 |
| 1.4M | 64QAM | 1 | 0 | 22.38 | 22.65 | 22.31 |
| | | 1 | 2 | 22.16 | 22.36 | 22.18 |
| | | 1 | 5 | 21.62 | 21.86 | 21.57 |
| | | 3 | 0 | 22.25 | 22.46 | 22.18 |
| | | 3 | 1 | 22.24 | 22.45 | 22.06 |
| | | 3 | 3 | 21.66 | 21.95 | 21.67 |
| | | 6 | 0 | 20.82 | 20.97 | 20.67 |
| 1.4M | 256QAM | 1 | 0 | 19.17 | 19.22 | 19.22 |
| | | 1 | 2 | 19.30 | 19.58 | 19.05 |
| | | 1 | 5 | 18.92 | 18.99 | 18.67 |
| | | 3 | 0 | 19.07 | 19.50 | 19.11 |
| | | 3 | 1 | 19.14 | 19.41 | 19.23 |
| | | 3 | 3 | 19.23 | 19.23 | 18.86 |
| | | 6 | 0 | 18.44 | 18.64 | 18.08 |

| LTE Band 26 | | | | | | |
|---|---|---|---|---|---|---|
| BW | MCS Index | RB Size | RB Offset | Low | Mid | High |
| | | Channel | | 26865 | 26915 | 26965 |
| | | Frequency (MHz) | | 831.5 | 836.5 | 841.5 |
| 15M | QPSK | 1 | 0 | 24.71 | 24.67 | 24.92 |
| | | 1 | 37 | 24.67 | 24.64 | 24.87 |
| | | 1 | 74 | 24.58 | 24.58 | 24.78 |
| | | 36 | 0 | 23.67 | 23.58 | 23.87 |
| | | 36 | 19 | 23.66 | 23.63 | 23.86 |
| | | 36 | 39 | 23.62 | 23.61 | 23.82 |
| | | 75 | 0 | 23.65 | 23.55 | 23.85 |
| 15M | 16QAM | 1 | 0 | 23.61 | 23.56 | 23.81 |
| | | 1 | 37 | 23.58 | 23.48 | 23.78 |
| | | 1 | 74 | 23.57 | 23.50 | 23.77 |
| | | 36 | 0 | 22.71 | 22.64 | 22.91 |
| | | 36 | 19 | 22.66 | 22.64 | 22.86 |
| | | 36 | 39 | 22.63 | 22.59 | 22.83 |
| | | 75 | 0 | 22.67 | 22.59 | 22.87 |
| 15M | 64QAM | 1 | 0 | 22.61 | 22.55 | 22.81 |
| | | 1 | 37 | 22.35 | 22.32 | 22.55 |
| | | 1 | 74 | 22.24 | 22.17 | 22.44 |
| | | 36 | 0 | 21.64 | 21.56 | 21.84 |
| | | 36 | 19 | 21.35 | 21.27 | 21.55 |
| | | 36 | 39 | 20.95 | 20.88 | 21.15 |
| | | 75 | 0 | 21.05 | 20.96 | 21.25 |
| 15M | 256QAM | 1 | 0 | 19.09 | 19.03 | 19.37 |
| | | 1 | 37 | 19.18 | 19.11 | 19.30 |
| | | 1 | 74 | 19.11 | 19.08 | 19.36 |
| | | 36 | 0 | 18.27 | 18.21 | 18.51 |
| | | 36 | 19 | 18.09 | 17.99 | 18.62 |
| | | 36 | 39 | 18.27 | 18.24 | 18.30 |
| | | 75 | 0 | 18.32 | 18.23 | 18.49 |

| LTE Band 26 | | | | | | |
|---|---|---|---|---|---|---|
| BW | MCS Index | RB Size | RB Offset | Low | Mid | High |
| | | Channel | | 26840 | 26915 | 26990 |
| | | Frequency (MHz) | | 829 | 836.5 | 844 |
| 10M | QPSK | 1 | 0 | 24.59 | 24.66 | 24.87 |
| | | 1 | 24 | 24.64 | 24.59 | 24.84 |
| | | 1 | 49 | 24.44 | 24.52 | 24.70 |
| | | 25 | 0 | 23.61 | 23.48 | 23.84 |
| | | 25 | 12 | 23.66 | 23.58 | 23.76 |
| | | 25 | 25 | 23.59 | 23.47 | 23.82 |
| | | 50 | 0 | 23.54 | 23.40 | 23.81 |
| 10M | 16QAM | 1 | 0 | 23.46 | 23.48 | 23.78 |
| | | 1 | 24 | 23.57 | 23.38 | 23.73 |
| | | 1 | 49 | 23.54 | 23.43 | 23.75 |
| | | 25 | 0 | 22.57 | 22.58 | 22.88 |
| | | 25 | 12 | 22.53 | 22.64 | 22.80 |
| | | 25 | 25 | 22.56 | 22.55 | 22.78 |
| | | 50 | 0 | 22.59 | 22.55 | 22.87 |
| 10M | 64QAM | 1 | 0 | 22.60 | 22.44 | 22.75 |
| | | 1 | 24 | 22.26 | 22.28 | 22.48 |
| | | 1 | 49 | 22.20 | 22.10 | 22.43 |
| | | 25 | 0 | 21.59 | 21.53 | 21.80 |
| | | 25 | 12 | 21.21 | 21.15 | 21.47 |
| | | 25 | 25 | 20.84 | 20.74 | 21.07 |
| | | 50 | 0 | 20.99 | 20.87 | 21.16 |
| 10M | 256QAM | 1 | 0 | 19.08 | 18.98 | 19.57 |
| | | 1 | 24 | 19.08 | 18.98 | 19.52 |
| | | 1 | 49 | 19.11 | 19.05 | 19.35 |
| | | 25 | 0 | 18.16 | 18.20 | 18.51 |
| | | 25 | 12 | 18.01 | 17.92 | 18.17 |
| | | 25 | 25 | 18.26 | 18.14 | 18.53 |
| | | 50 | 0 | 18.32 | 18.19 | 18.24 |

| LTE Band 26 | | | | | | |
|---|---|---|---|---|---|---|
| BW | MCS Index | RB Size | RB Offset | Low | Mid | High |
| | | Channel | | 26815 | 26915 | 27015 |
| | | Frequency (MHz) | | 826.5 | 836.5 | 846.5 |
| 5M | QPSK | 1 | 0 | 24.51 | 24.53 | 24.79 |
| | | 1 | 12 | 24.57 | 24.57 | 24.68 |
| | | 1 | 24 | 24.31 | 24.41 | 24.57 |
| | | 12 | 0 | 23.47 | 23.48 | 23.68 |
| | | 12 | 6 | 23.58 | 23.50 | 23.77 |
| | | 12 | 13 | 23.58 | 23.43 | 23.61 |
| | | 25 | 0 | 23.52 | 23.38 | 23.65 |
| 5M | 16QAM | 1 | 0 | 23.43 | 23.45 | 23.68 |
| | | 1 | 12 | 23.55 | 23.28 | 23.65 |
| | | 1 | 24 | 23.54 | 23.34 | 23.61 |
| | | 12 | 0 | 22.44 | 22.43 | 22.73 |
| | | 12 | 6 | 22.49 | 22.56 | 22.79 |
| | | 12 | 13 | 22.44 | 22.40 | 22.76 |
| | | 25 | 0 | 22.47 | 22.51 | 22.72 |
| 5M | 64QAM | 1 | 0 | 22.46 | 22.39 | 22.71 |
| | | 1 | 12 | 22.20 | 22.17 | 22.47 |
| | | 1 | 24 | 22.20 | 22.06 | 22.26 |
| | | 12 | 0 | 21.57 | 21.44 | 21.66 |
| | | 12 | 6 | 21.08 | 21.09 | 21.41 |
| | | 12 | 13 | 20.74 | 20.74 | 21.06 |
| | | 25 | 0 | 20.90 | 20.82 | 21.05 |
| 5M | 256QAM | 1 | 0 | 18.94 | 18.97 | 19.17 |
| | | 1 | 12 | 19.08 | 18.86 | 19.24 |
| | | 1 | 24 | 19.10 | 18.94 | 19.32 |
| | | 12 | 0 | 18.04 | 18.11 | 18.35 |
| | | 12 | 6 | 17.91 | 17.87 | 18.18 |
| | | 12 | 13 | 18.19 | 18.14 | 18.04 |
| | | 25 | 0 | 18.19 | 18.17 | 18.06 |

| LTE Band 26 | | | | | | |
|---|---|---|---|---|---|---|
| BW | MCS Index | RB Size | RB Offset | Low | Mid | High |
| | | Channel | | 26805 | 26915 | 27025 |
| | | Frequency (MHz) | | 825.5 | 836.5 | 847.5 |
| 3M | QPSK | 1 | 0 | 24.57 | 24.80 | 24.75 |
| | | 1 | 7 | 24.52 | 24.69 | 24.59 |
| | | 1 | 14 | 24.49 | 24.69 | 24.57 |
| | | 8 | 0 | 23.35 | 23.84 | 23.73 |
| | | 8 | 3 | 23.44 | 23.65 | 23.65 |
| | | 8 | 7 | 23.44 | 23.70 | 23.60 |
| | | 15 | 0 | 23.26 | 23.81 | 23.58 |
| 3M | 16QAM | 1 | 0 | 23.35 | 23.70 | 23.76 |
| | | 1 | 7 | 23.34 | 23.64 | 23.77 |
| | | 1 | 14 | 23.43 | 23.70 | 23.66 |
| | | 8 | 0 | 22.56 | 22.82 | 22.78 |
| | | 8 | 3 | 22.53 | 22.71 | 22.77 |
| | | 8 | 7 | 22.46 | 22.69 | 22.73 |
| | | 15 | 0 | 22.50 | 22.74 | 22.76 |
| 3M | 64QAM | 1 | 0 | 22.37 | 22.70 | 22.73 |
| | | 1 | 7 | 22.24 | 22.35 | 22.48 |
| | | 1 | 14 | 22.00 | 22.38 | 22.36 |
| | | 8 | 0 | 21.42 | 21.80 | 21.64 |
| | | 8 | 3 | 21.05 | 21.43 | 21.38 |
| | | 8 | 7 | 20.65 | 20.98 | 20.99 |
| | | 15 | 0 | 20.85 | 21.10 | 21.13 |
| 3M | 256QAM | 1 | 0 | 18.95 | 19.46 | 19.45 |
| | | 1 | 7 | 18.87 | 19.47 | 19.05 |
| | | 1 | 14 | 19.01 | 19.23 | 19.37 |
| | | 8 | 0 | 18.09 | 18.46 | 18.42 |
| | | 8 | 3 | 17.91 | 18.06 | 18.27 |
| | | 8 | 7 | 18.01 | 18.42 | 18.36 |
| | | 15 | 0 | 18.10 | 18.18 | 18.11 |

| LTE Band 26 | | | | | | |
|---|---|---|---|---|---|---|
| BW | MCS Index | RB Size | RB Offset | Low | Mid | High |
| | | Channel | | 26797 | 26915 | 27033 |
| | | Frequency (MHz) | | 824.7 | 836.5 | 848.3 |
| 1.4M | QPSK | 1 | 0 | 24.63 | 24.77 | 24.75 |
| | | 1 | 2 | 24.48 | 24.74 | 24.73 |
| | | 1 | 5 | 24.43 | 24.63 | 24.63 |
| | | 3 | 0 | 24.41 | 24.69 | 24.73 |
| | | 3 | 1 | 24.49 | 24.67 | 24.79 |
| | | 3 | 3 | 24.38 | 24.76 | 24.74 |
| | | 6 | 0 | 23.35 | 23.68 | 23.75 |
| 1.4M | 16QAM | 1 | 0 | 23.45 | 23.73 | 23.64 |
| | | 1 | 2 | 23.33 | 23.73 | 23.55 |
| | | 1 | 5 | 23.40 | 23.74 | 23.74 |
| | | 3 | 0 | 23.44 | 23.77 | 23.75 |
| | | 3 | 1 | 23.49 | 23.69 | 23.73 |
| | | 3 | 3 | 23.44 | 23.67 | 23.59 |
| | | 6 | 0 | 22.43 | 22.72 | 22.72 |
| 1.4M | 64QAM | 1 | 0 | 22.34 | 22.62 | 22.61 |
| | | 1 | 2 | 22.25 | 22.41 | 22.50 |
| | | 1 | 5 | 22.08 | 22.35 | 22.34 |
| | | 3 | 0 | 22.44 | 22.73 | 22.66 |
| | | 3 | 1 | 22.13 | 22.35 | 22.41 |
| | | 3 | 3 | 21.65 | 22.01 | 21.95 |
| | | 6 | 0 | 20.76 | 21.04 | 21.05 |
| 1.4M | 256QAM | 1 | 0 | 18.90 | 19.50 | 19.40 |
| | | 1 | 2 | 18.86 | 19.40 | 19.31 |
| | | 1 | 5 | 18.99 | 19.24 | 19.38 |
| | | 3 | 0 | 19.07 | 19.44 | 19.14 |
| | | 3 | 1 | 18.88 | 19.17 | 19.20 |
| | | 3 | 3 | 19.09 | 19.39 | 19.49 |
| | | 6 | 0 | 18.10 | 18.14 | 18.39 |

**ERP Power (dBm)**

| Band | CDMA2000 BC0 | | |
|---|---|---|---|
| Channel | 1014 | 384 | 776 |
| Frequency | 824.73 | 836.52 | 848.28 |
| RC1+SO55 | 19.85 | 19.82 | 18.80 |
| RC3+SO55 | 19.91 | 19.88 | 18.87 |
| RC3+SO32(+ F-SCH) | 19.90 | 19.84 | 18.82 |
| RC3+SO32(+SCH) | 19.88 | 19.85 | 18.81 |
| RC1+SO3, 1/8 Rate | 19.87 | 19.83 | 18.80 |
| RTAP 153.6 | 19.89 | 19.86 | 18.86 |
| RETAP 4096 | 19.87 | 19.83 | 18.85 |

| Band | GSM850 | | |
|---|---|---|---|
| Channel | 128 | 189 | 251 |
| Frequency | 824.2 | 836.4 | 848.8 |
| GSM | 28.88 | 28.95 | 28.93 |
| GPRS 1Tx Slot | 28.80 | 28.86 | 28.85 |
| GPRS 2Tx Slot | 28.78 | 28.85 | 28.83 |
| GPRS 3Tx Slot | 28.81 | 28.87 | 28.86 |
| GPRS 4Tx Slot | 28.84 | 28.90 | 28.88 |
| EDGE 1Tx Slot (MCS9) | 22.36 | 22.41 | 22.37 |
| EDGE 2Tx Slot (MCS9) | 22.26 | 22.32 | 22.30 |
| EDGE 3Tx Slot (MCS9) | 22.05 | 22.12 | 22.11 |
| EDGE 4Tx Slot (MCS9) | 21.82 | 21.92 | 21.90 |

| Band | WCDMA V | | |
|---|---|---|---|
| TX Channel | 4132 | 4182 | 4233 |
| Rx Channel | 4357 | 4407 | 4458 |
| Frequency | 826.4 | 836.4 | 846.6 |
| RMC 12.2K | 20.07 | 20.09 | 19.95 |
| HSDPA Subtest-1 | 19.30 | 19.23 | 19.18 |
| HSDPA Subtest-2 | 19.29 | 19.22 | 19.17 |
| HSDPA Subtest-3 | 18.80 | 18.73 | 18.68 |
| HSDPA Subtest-4 | 18.83 | 18.76 | 18.71 |
| DC-HSDPA Subtest-1 | 19.22 | 19.15 | 19.10 |
| DC-HSDPA Subtest-2 | 19.21 | 19.14 | 19.09 |
| DC-HSDPA Subtest-3 | 18.72 | 18.65 | 18.60 |
| DC-HSDPA Subtest-4 | 18.75 | 18.68 | 18.63 |
| HSUPA Subtest-1 | 19.14 | 19.07 | 19.02 |
| HSUPA Subtest-2 | 17.09 | 17.02 | 16.97 |
| HSUPA Subtest-3 | 18.14 | 18.07 | 18.02 |
| HSUPA Subtest-4 | 17.10 | 17.03 | 16.98 |
| HSUPA Subtest-5 | 19.17 | 19.10 | 19.05 |

| LTE Band 5 | | | | | | |
|---|---|---|---|---|---|---|
| BW | MCS Index | RB Size | RB Offset | Low | Mid | High |
| | | Channel | | 20450 | 20525 | 20600 |
| | | Frequency (MHz) | | 829 | 836.5 | 844 |
| 10M | QPSK | 1 | 0 | 20.69 | 20.92 | 20.59 |
| | | 1 | 24 | 20.61 | 20.84 | 20.51 |
| | | 1 | 49 | 20.39 | 20.62 | 20.29 |
| | | 25 | 0 | 19.65 | 19.95 | 19.72 |
| | | 25 | 12 | 19.64 | 19.90 | 19.70 |
| | | 25 | 25 | 19.55 | 19.78 | 19.45 |
| | | 50 | 0 | 19.72 | 19.94 | 19.64 |
| 10M | 16QAM | 1 | 0 | 19.65 | 19.94 | 19.72 |
| | | 1 | 24 | 19.67 | 19.93 | 19.72 |
| | | 1 | 49 | 19.40 | 19.57 | 19.30 |
| | | 25 | 0 | 18.72 | 18.95 | 18.77 |
| | | 25 | 12 | 18.71 | 18.88 | 18.61 |
| | | 25 | 25 | 18.56 | 18.73 | 18.46 |
| | | 50 | 0 | 18.64 | 18.91 | 18.73 |
| 10M | 64QAM | 1 | 0 | 18.44 | 18.67 | 18.34 |
| | | 1 | 24 | 18.31 | 18.54 | 18.21 |
| | | 1 | 49 | 17.70 | 17.93 | 17.60 |
| | | 25 | 0 | 17.36 | 17.59 | 17.26 |
| | | 25 | 12 | 17.30 | 17.53 | 17.20 |
| | | 25 | 25 | 16.80 | 17.03 | 16.70 |
| | | 50 | 0 | 16.95 | 17.18 | 16.85 |
| 10M | 256QAM | 1 | 0 | 15.17 | 15.75 | 15.07 |
| | | 1 | 24 | 15.04 | 15.39 | 14.99 |
| | | 1 | 49 | 15.10 | 15.42 | 14.88 |
| | | 25 | 0 | 14.39 | 14.42 | 14.36 |
| | | 25 | 12 | 14.31 | 14.71 | 14.42 |
| | | 25 | 25 | 14.34 | 14.45 | 14.26 |
| | | 50 | 0 | 14.34 | 14.44 | 14.10 |

| LTE Band 5 | | | | | | |
|---|---|---|---|---|---|---|
| BW | MCS Index | RB Size | RB Offset | Low | Mid | High |
| | | Channel | | 20425 | 20525 | 20625 |
| | | Frequency (MHz) | | 826.5 | 836.5 | 846.5 |
| 5M | QPSK | 1 | 0 | 20.61 | 20.84 | 20.54 |
| | | 1 | 12 | 20.52 | 20.78 | 20.43 |
| | | 1 | 24 | 20.33 | 20.62 | 20.21 |
| | | 12 | 0 | 19.65 | 19.87 | 19.72 |
| | | 12 | 6 | 19.60 | 19.81 | 19.62 |
| | | 12 | 13 | 19.54 | 19.73 | 19.37 |
| | | 25 | 0 | 19.67 | 19.88 | 19.54 |
| 5M | 16QAM | 1 | 0 | 19.61 | 19.89 | 19.68 |
| | | 1 | 12 | 19.63 | 19.88 | 19.65 |
| | | 1 | 24 | 19.30 | 19.53 | 19.29 |
| | | 12 | 0 | 18.68 | 18.90 | 18.74 |
| | | 12 | 6 | 18.62 | 18.83 | 18.52 |
| | | 12 | 13 | 18.46 | 18.71 | 18.43 |
| | | 25 | 0 | 18.60 | 18.83 | 18.67 |
| 5M | 64QAM | 1 | 0 | 18.37 | 18.57 | 18.31 |
| | | 1 | 12 | 18.31 | 18.53 | 18.19 |
| | | 1 | 24 | 17.67 | 17.85 | 17.57 |
| | | 12 | 0 | 17.35 | 17.51 | 17.22 |
| | | 12 | 6 | 17.24 | 17.44 | 17.16 |
| | | 12 | 13 | 16.78 | 16.93 | 16.70 |
| | | 25 | 0 | 16.85 | 17.12 | 16.78 |
| 5M | 256QAM | 1 | 0 | 15.02 | 15.44 | 15.32 |
| | | 1 | 12 | 15.18 | 15.61 | 14.99 |
| | | 1 | 24 | 14.96 | 15.35 | 15.04 |
| | | 12 | 0 | 14.08 | 14.42 | 14.29 |
| | | 12 | 6 | 14.17 | 14.55 | 14.12 |
| | | 12 | 13 | 14.33 | 14.54 | 14.25 |
| | | 25 | 0 | 14.43 | 14.40 | 14.04 |

| LTE Band 5 | | | | | | |
|---|---|---|---|---|---|---|
| BW | MCS Index | RB Size | RB Offset | Low | Mid | High |
| | | Channel | | 20415 | 20525 | 20635 |
| | | Frequency (MHz) | | 825.5 | 836.5 | 847.5 |
| 3M | QPSK | 1 | 0 | 20.55 | 20.82 | 20.39 |
| | | 1 | 7 | 20.44 | 20.77 | 20.44 |
| | | 1 | 14 | 20.20 | 20.46 | 20.14 |
| | | 8 | 0 | 19.40 | 19.72 | 19.56 |
| | | 8 | 3 | 19.49 | 19.86 | 19.66 |
| | | 8 | 7 | 19.37 | 19.62 | 19.30 |
| | | 15 | 0 | 19.57 | 19.75 | 19.41 |
| 3M | 16QAM | 1 | 0 | 19.55 | 19.90 | 19.65 |
| | | 1 | 7 | 19.46 | 19.71 | 19.65 |
| | | 1 | 14 | 19.28 | 19.48 | 19.13 |
| | | 8 | 0 | 18.71 | 18.89 | 18.71 |
| | | 8 | 3 | 18.56 | 18.80 | 18.39 |
| | | 8 | 7 | 18.52 | 18.68 | 18.40 |
| | | 15 | 0 | 18.59 | 18.77 | 18.62 |
| 3M | 64QAM | 1 | 0 | 18.39 | 18.51 | 18.21 |
| | | 1 | 7 | 18.16 | 18.37 | 18.05 |
| | | 1 | 14 | 17.65 | 17.82 | 17.43 |
| | | 8 | 0 | 17.29 | 17.48 | 17.13 |
| | | 8 | 3 | 17.19 | 17.31 | 17.05 |
| | | 8 | 7 | 16.73 | 16.96 | 16.62 |
| | | 15 | 0 | 16.76 | 17.05 | 16.78 |
| 3M | 256QAM | 1 | 0 | 15.18 | 15.32 | 14.93 |
| | | 1 | 7 | 15.07 | 15.22 | 15.00 |
| | | 1 | 14 | 14.74 | 15.12 | 14.63 |
| | | 8 | 0 | 14.24 | 14.53 | 14.23 |
| | | 8 | 3 | 14.15 | 14.31 | 14.35 |
| | | 8 | 7 | 13.98 | 14.41 | 14.03 |
| | | 15 | 0 | 14.17 | 14.49 | 13.99 |

| LTE Band 5 | | | | | | |
|---|---|---|---|---|---|---|
| BW | MCS Index | RB Size | RB Offset | Low | Mid | High |
| | | Channel | | 20407 | 20525 | 20643 |
| | | Frequency (MHz) | | 824.7 | 836.5 | 848.3 |
| 1.4M | QPSK | 1 | 0 | 20.55 | 20.72 | 20.42 |
| | | 1 | 2 | 20.51 | 20.74 | 20.50 |
| | | 1 | 5 | 20.24 | 20.57 | 20.19 |
| | | 3 | 0 | 20.60 | 20.81 | 20.64 |
| | | 3 | 1 | 20.57 | 20.82 | 20.68 |
| | | 3 | 3 | 20.43 | 20.63 | 20.28 |
| | | 6 | 0 | 19.59 | 19.84 | 19.44 |
| 1.4M | 16QAM | 1 | 0 | 19.55 | 19.79 | 19.57 |
| | | 1 | 2 | 19.57 | 19.82 | 19.60 |
| | | 1 | 5 | 19.40 | 19.42 | 19.05 |
| | | 3 | 0 | 19.62 | 19.80 | 19.64 |
| | | 3 | 1 | 19.50 | 19.85 | 19.54 |
| | | 3 | 3 | 19.38 | 19.58 | 19.25 |
| | | 6 | 0 | 18.50 | 18.87 | 18.71 |
| 1.4M | 64QAM | 1 | 0 | 18.34 | 18.61 | 18.27 |
| | | 1 | 2 | 18.12 | 18.32 | 18.14 |
| | | 1 | 5 | 17.58 | 17.82 | 17.53 |
| | | 3 | 0 | 18.21 | 18.42 | 18.14 |
| | | 3 | 1 | 18.20 | 18.41 | 18.02 |
| | | 3 | 3 | 17.62 | 17.91 | 17.63 |
| | | 6 | 0 | 16.78 | 16.93 | 16.63 |
| 1.4M | 256QAM | 1 | 0 | 15.13 | 15.18 | 15.18 |
| | | 1 | 2 | 15.26 | 15.54 | 15.01 |
| | | 1 | 5 | 14.88 | 14.95 | 14.63 |
| | | 3 | 0 | 15.03 | 15.46 | 15.07 |
| | | 3 | 1 | 15.10 | 15.37 | 15.19 |
| | | 3 | 3 | 15.19 | 15.19 | 14.82 |
| | | 6 | 0 | 14.40 | 14.60 | 14.04 |

| LTE Band 26 | | | | | | |
|---|---|---|---|---|---|---|
| BW | MCS Index | RB Size | RB Offset | Low | Mid | High |
| | | Channel | | 26865 | 26915 | 26965 |
| | | Frequency (MHz) | | 831.5 | 836.5 | 841.5 |
| 15M | QPSK | 1 | 0 | 20.67 | 20.63 | 20.88 |
| | | 1 | 37 | 20.63 | 20.60 | 20.83 |
| | | 1 | 74 | 20.54 | 20.54 | 20.74 |
| | | 36 | 0 | 19.63 | 19.54 | 19.83 |
| | | 36 | 19 | 19.62 | 19.59 | 19.82 |
| | | 36 | 39 | 19.58 | 19.57 | 19.78 |
| | | 75 | 0 | 19.61 | 19.51 | 19.81 |
| 15M | 16QAM | 1 | 0 | 19.57 | 19.52 | 19.77 |
| | | 1 | 37 | 19.54 | 19.44 | 19.74 |
| | | 1 | 74 | 19.53 | 19.46 | 19.73 |
| | | 36 | 0 | 18.67 | 18.60 | 18.87 |
| | | 36 | 19 | 18.62 | 18.60 | 18.82 |
| | | 36 | 39 | 18.59 | 18.55 | 18.79 |
| | | 75 | 0 | 18.63 | 18.55 | 18.83 |
| 15M | 64QAM | 1 | 0 | 18.57 | 18.51 | 18.77 |
| | | 1 | 37 | 18.31 | 18.28 | 18.51 |
| | | 1 | 74 | 18.20 | 18.13 | 18.40 |
| | | 36 | 0 | 17.60 | 17.52 | 17.80 |
| | | 36 | 19 | 17.31 | 17.23 | 17.51 |
| | | 36 | 39 | 16.91 | 16.84 | 17.11 |
| | | 75 | 0 | 17.01 | 16.92 | 17.21 |
| 15M | 256QAM | 1 | 0 | 15.05 | 14.99 | 15.33 |
| | | 1 | 37 | 15.14 | 15.07 | 15.26 |
| | | 1 | 74 | 15.07 | 15.04 | 15.32 |
| | | 36 | 0 | 14.23 | 14.17 | 14.47 |
| | | 36 | 19 | 14.05 | 13.95 | 14.58 |
| | | 36 | 39 | 14.23 | 14.20 | 14.26 |
| | | 75 | 0 | 14.28 | 14.19 | 14.45 |

| LTE Band 26 | | | | | | |
|---|---|---|---|---|---|---|
| BW | MCS Index | RB Size | RB Offset | Low | Mid | High |
| | | Channel | | 26840 | 26915 | 26990 |
| | | Frequency (MHz) | | 829 | 836.5 | 844 |
| 10M | QPSK | 1 | 0 | 20.55 | 20.62 | 20.83 |
| | | 1 | 24 | 20.60 | 20.55 | 20.80 |
| | | 1 | 49 | 20.40 | 20.48 | 20.66 |
| | | 25 | 0 | 19.57 | 19.44 | 19.80 |
| | | 25 | 12 | 19.62 | 19.54 | 19.72 |
| | | 25 | 25 | 19.55 | 19.43 | 19.78 |
| | | 50 | 0 | 19.50 | 19.36 | 19.77 |
| 10M | 16QAM | 1 | 0 | 19.42 | 19.44 | 19.74 |
| | | 1 | 24 | 19.53 | 19.34 | 19.69 |
| | | 1 | 49 | 19.50 | 19.39 | 19.71 |
| | | 25 | 0 | 18.53 | 18.54 | 18.84 |
| | | 25 | 12 | 18.49 | 18.60 | 18.76 |
| | | 25 | 25 | 18.52 | 18.51 | 18.74 |
| | | 50 | 0 | 18.55 | 18.51 | 18.83 |
| 10M | 64QAM | 1 | 0 | 18.56 | 18.40 | 18.71 |
| | | 1 | 24 | 18.22 | 18.24 | 18.44 |
| | | 1 | 49 | 18.16 | 18.06 | 18.39 |
| | | 25 | 0 | 17.55 | 17.49 | 17.76 |
| | | 25 | 12 | 17.17 | 17.11 | 17.43 |
| | | 25 | 25 | 16.80 | 16.70 | 17.03 |
| | | 50 | 0 | 16.95 | 16.83 | 17.12 |
| 10M | 256QAM | 1 | 0 | 15.04 | 14.94 | 15.53 |
| | | 1 | 24 | 15.04 | 14.94 | 15.48 |
| | | 1 | 49 | 15.07 | 15.01 | 15.31 |
| | | 25 | 0 | 14.12 | 14.16 | 14.47 |
| | | 25 | 12 | 13.97 | 13.88 | 14.13 |
| | | 25 | 25 | 14.22 | 14.10 | 14.49 |
| | | 50 | 0 | 14.28 | 14.15 | 14.20 |

| LTE Band 26 | | | | | | |
|---|---|---|---|---|---|---|
| BW | MCS Index | RB Size | RB Offset | Low | Mid | High |
| | | Channel | | 26815 | 26915 | 27015 |
| | | Frequency (MHz) | | 826.5 | 836.5 | 846.5 |
| 5M | QPSK | 1 | 0 | 20.47 | 20.49 | 20.75 |
| | | 1 | 12 | 20.53 | 20.53 | 20.64 |
| | | 1 | 24 | 20.27 | 20.37 | 20.53 |
| | | 12 | 0 | 19.43 | 19.44 | 19.64 |
| | | 12 | 6 | 19.54 | 19.46 | 19.73 |
| | | 12 | 13 | 19.54 | 19.39 | 19.57 |
| | | 25 | 0 | 19.48 | 19.34 | 19.61 |
| 5M | 16QAM | 1 | 0 | 19.39 | 19.41 | 19.64 |
| | | 1 | 12 | 19.51 | 19.24 | 19.61 |
| | | 1 | 24 | 19.50 | 19.30 | 19.57 |
| | | 12 | 0 | 18.40 | 18.39 | 18.69 |
| | | 12 | 6 | 18.45 | 18.52 | 18.75 |
| | | 12 | 13 | 18.40 | 18.36 | 18.72 |
| | | 25 | 0 | 18.43 | 18.47 | 18.68 |
| 5M | 64QAM | 1 | 0 | 18.42 | 18.35 | 18.67 |
| | | 1 | 12 | 18.16 | 18.13 | 18.43 |
| | | 1 | 24 | 18.16 | 18.02 | 18.22 |
| | | 12 | 0 | 17.53 | 17.40 | 17.62 |
| | | 12 | 6 | 17.04 | 17.05 | 17.37 |
| | | 12 | 13 | 16.70 | 16.70 | 17.02 |
| | | 25 | 0 | 16.86 | 16.78 | 17.01 |
| 5M | 256QAM | 1 | 0 | 14.90 | 14.93 | 15.13 |
| | | 1 | 12 | 15.04 | 14.82 | 15.20 |
| | | 1 | 24 | 15.06 | 14.90 | 15.28 |
| | | 12 | 0 | 14.00 | 14.07 | 14.31 |
| | | 12 | 6 | 13.87 | 13.83 | 14.14 |
| | | 12 | 13 | 14.15 | 14.10 | 14.00 |
| | | 25 | 0 | 14.15 | 14.13 | 14.02 |

| LTE Band 26 | | | | | | |
|---|---|---|---|---|---|---|
| BW | MCS Index | RB Size | RB Offset | Low | Mid | High |
| | | Channel | | 26805 | 26915 | 27025 |
| | | Frequency (MHz) | | 825.5 | 836.5 | 847.5 |
| 3M | QPSK | 1 | 0 | 20.53 | 20.76 | 20.71 |
| | | 1 | 7 | 20.48 | 20.65 | 20.55 |
| | | 1 | 14 | 20.45 | 20.65 | 20.53 |
| | | 8 | 0 | 19.31 | 19.80 | 19.69 |
| | | 8 | 3 | 19.40 | 19.61 | 19.61 |
| | | 8 | 7 | 19.40 | 19.66 | 19.56 |
| | | 15 | 0 | 19.22 | 19.77 | 19.54 |
| 3M | 16QAM | 1 | 0 | 19.31 | 19.66 | 19.72 |
| | | 1 | 7 | 19.30 | 19.60 | 19.73 |
| | | 1 | 14 | 19.39 | 19.66 | 19.62 |
| | | 8 | 0 | 18.52 | 18.78 | 18.74 |
| | | 8 | 3 | 18.49 | 18.67 | 18.73 |
| | | 8 | 7 | 18.42 | 18.65 | 18.69 |
| | | 15 | 0 | 18.46 | 18.70 | 18.72 |
| 3M | 64QAM | 1 | 0 | 18.33 | 18.66 | 18.69 |
| | | 1 | 7 | 18.20 | 18.31 | 18.44 |
| | | 1 | 14 | 17.96 | 18.34 | 18.32 |
| | | 8 | 0 | 17.38 | 17.76 | 17.60 |
| | | 8 | 3 | 17.01 | 17.39 | 17.34 |
| | | 8 | 7 | 16.61 | 16.94 | 16.95 |
| | | 15 | 0 | 16.81 | 17.06 | 17.09 |
| 3M | 256QAM | 1 | 0 | 14.91 | 15.42 | 15.41 |
| | | 1 | 7 | 14.83 | 15.43 | 15.01 |
| | | 1 | 14 | 14.97 | 15.19 | 15.33 |
| | | 8 | 0 | 14.05 | 14.42 | 14.38 |
| | | 8 | 3 | 13.87 | 14.02 | 14.23 |
| | | 8 | 7 | 13.97 | 14.38 | 14.32 |
| | | 15 | 0 | 14.06 | 14.14 | 14.07 |

| LTE Band 26 | | | | | | |
|---|---|---|---|---|---|---|
| BW | MCS Index | RB Size | RB Offset | Low | Mid | High |
| | | Channel | | 26797 | 26915 | 27033 |
| | | Frequency (MHz) | | 824.7 | 836.5 | 848.3 |
| 1.4M | QPSK | 1 | 0 | 20.59 | 20.73 | 20.71 |
| | | 1 | 2 | 20.44 | 20.70 | 20.69 |
| | | 1 | 5 | 20.39 | 20.59 | 20.59 |
| | | 3 | 0 | 20.37 | 20.65 | 20.69 |
| | | 3 | 1 | 20.45 | 20.63 | 20.75 |
| | | 3 | 3 | 20.34 | 20.72 | 20.70 |
| | | 6 | 0 | 19.31 | 19.64 | 19.71 |
| 1.4M | 16QAM | 1 | 0 | 19.41 | 19.69 | 19.60 |
| | | 1 | 2 | 19.29 | 19.69 | 19.51 |
| | | 1 | 5 | 19.36 | 19.70 | 19.70 |
| | | 3 | 0 | 19.40 | 19.73 | 19.71 |
| | | 3 | 1 | 19.45 | 19.65 | 19.69 |
| | | 3 | 3 | 19.40 | 19.63 | 19.55 |
| | | 6 | 0 | 18.39 | 18.68 | 18.68 |
| 1.4M | 64QAM | 1 | 0 | 18.30 | 18.58 | 18.57 |
| | | 1 | 2 | 18.21 | 18.37 | 18.46 |
| | | 1 | 5 | 18.04 | 18.31 | 18.30 |
| | | 3 | 0 | 18.40 | 18.69 | 18.62 |
| | | 3 | 1 | 18.09 | 18.31 | 18.37 |
| | | 3 | 3 | 17.61 | 17.97 | 17.91 |
| | | 6 | 0 | 16.72 | 17.00 | 17.01 |
| 1.4M | 256QAM | 1 | 0 | 14.86 | 15.46 | 15.36 |
| | | 1 | 2 | 14.82 | 15.36 | 15.27 |
| | | 1 | 5 | 14.95 | 15.20 | 15.34 |
| | | 3 | 0 | 15.03 | 15.40 | 15.10 |
| | | 3 | 1 | 14.84 | 15.13 | 15.16 |
| | | 3 | 3 | 15.05 | 15.35 | 15.45 |
| | | 6 | 0 | 14.06 | 14.10 | 14.35 |

## 4.2 Modulation Characteristics Measurement

### 4.2.1 Limits of Modulation Characteristics

N/A

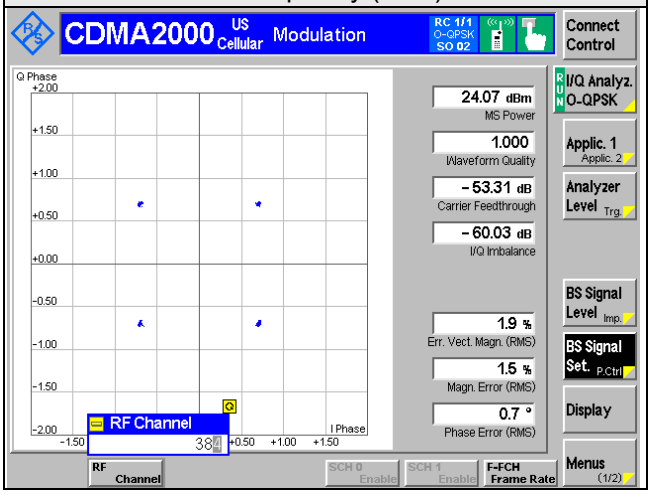
### 4.2.2 Test Procedure

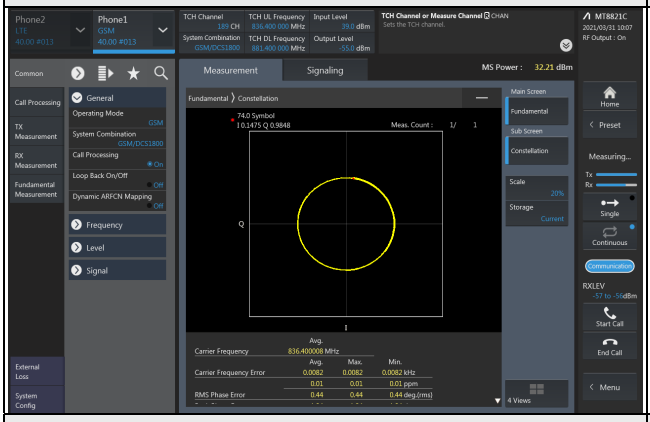
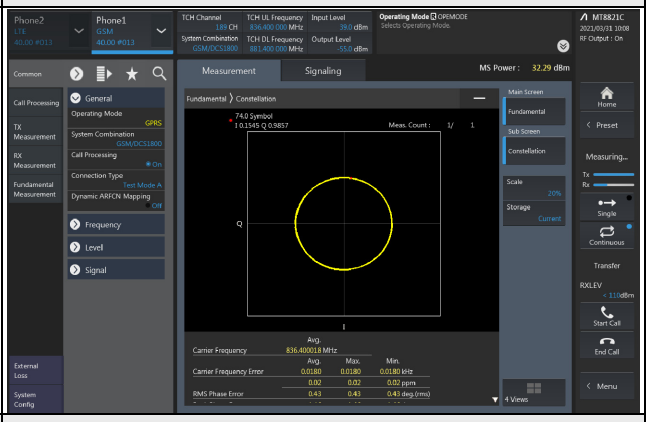
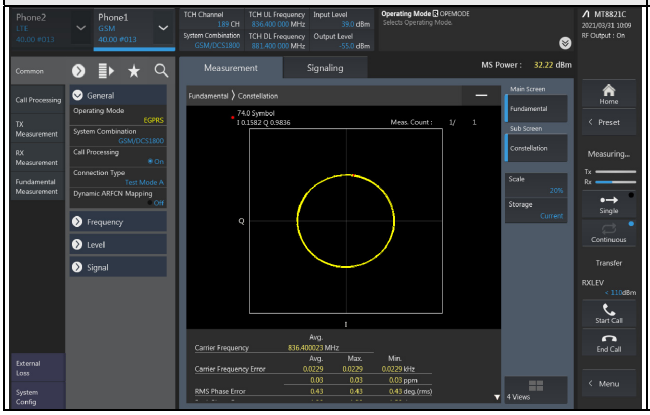
Connect the EUT to Communication Simulator via the antenna connector, The frequency band is set as EUT supported Modulation and Channels, the EUT output is matched with 50 ohm load, the waveform quality and constellation of the EUT was tested.

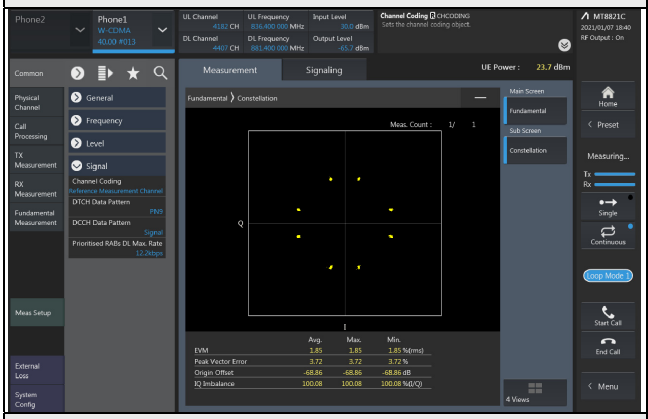
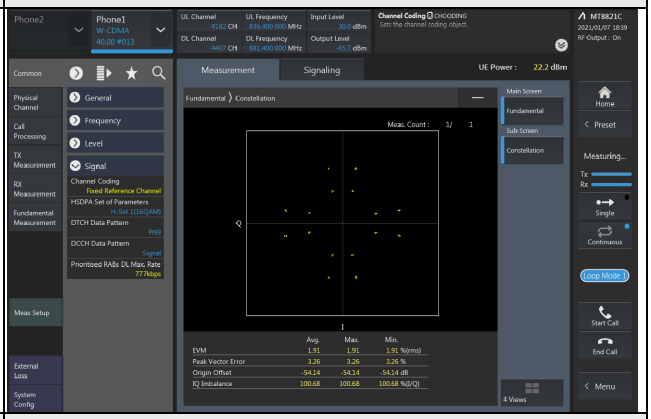
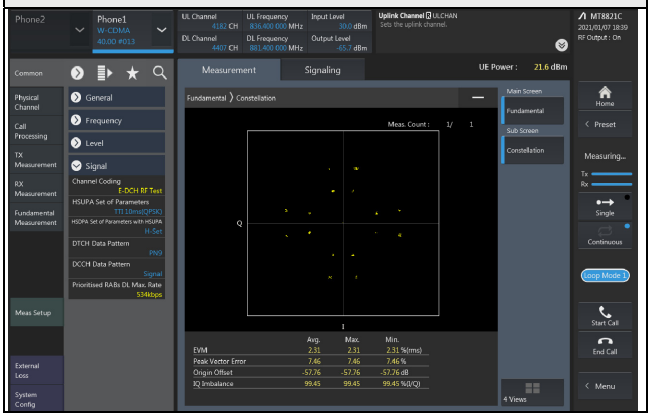
### 4.2.3 Test Setup

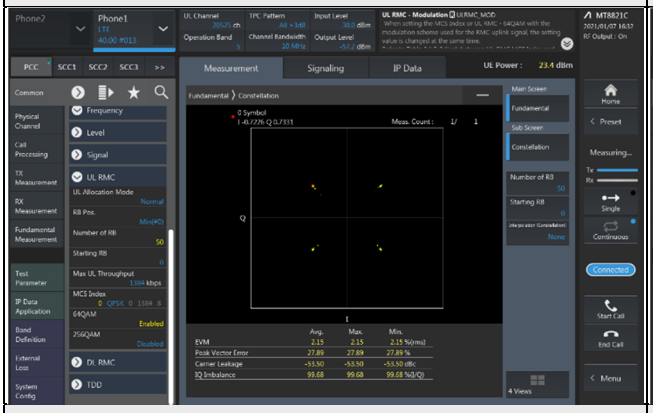
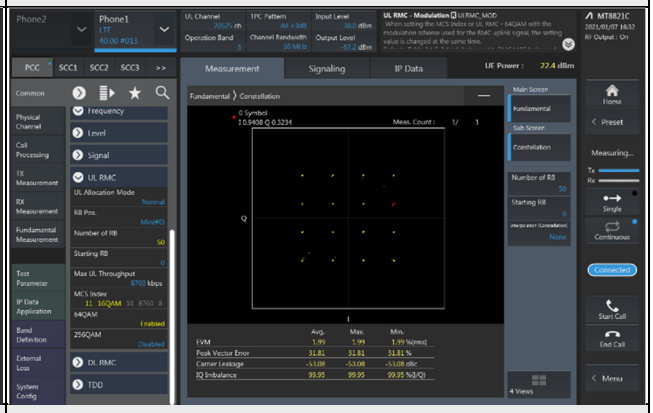
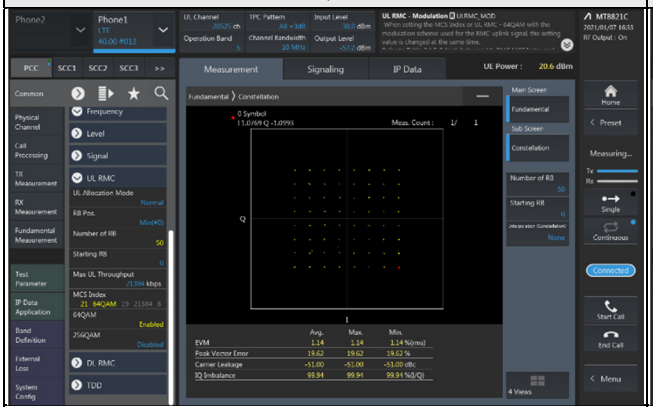
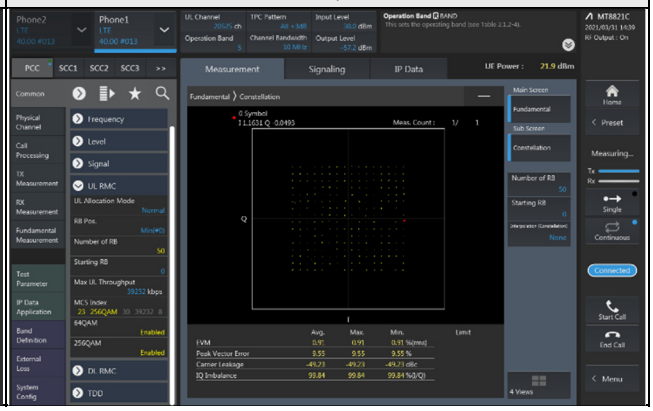
### 4.2.4 Test Results

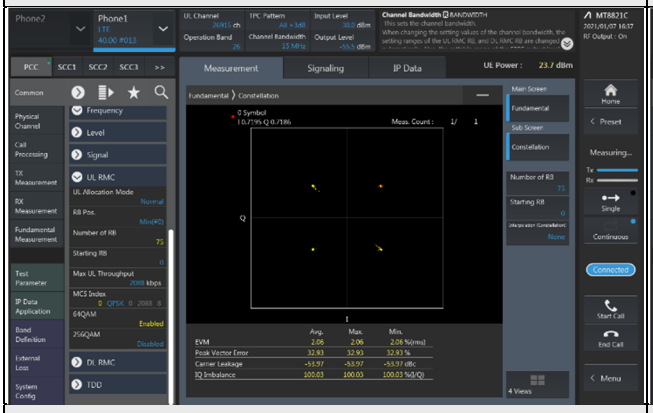
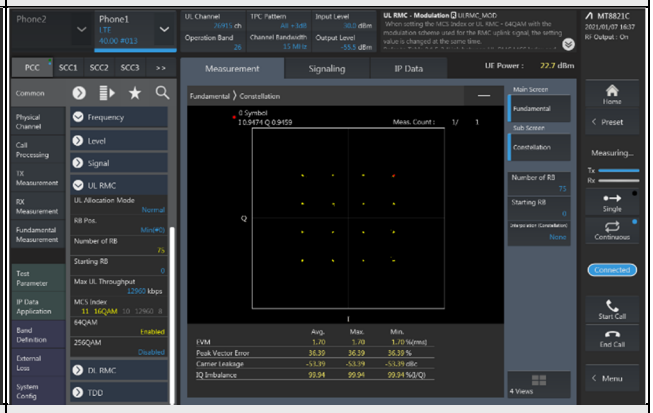
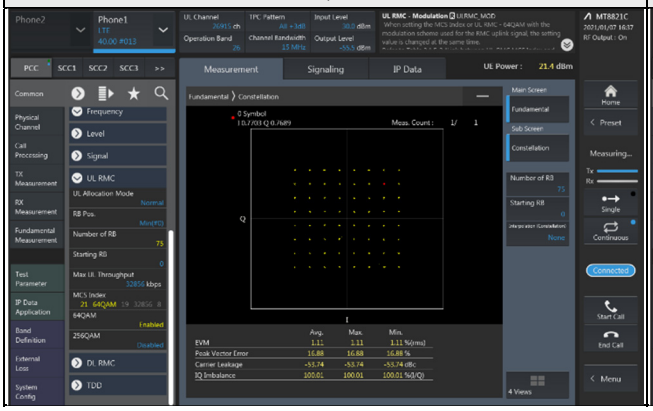
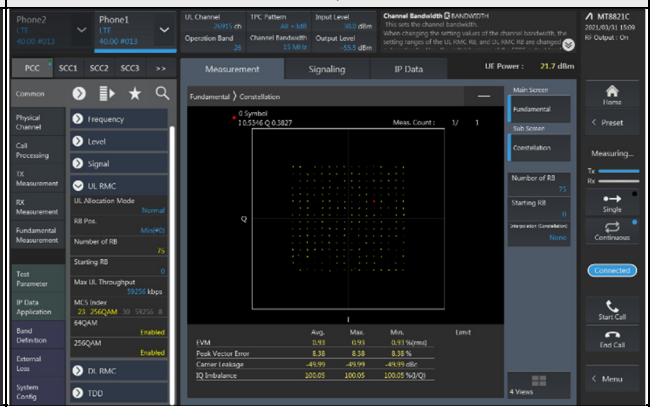
| CDMA |
| --- |
| Spectrum Plot of Measurement Value |
| Channel: 384 / Frequency (MHz): 836.52MHz |



| GSM | |
|---|---|
| Spectrum Plot of Measurement Value | |
| Channel: 189 / Frequency (MHz): 836.4MHz | |
| GSM | GPRS |
|  |  |
| EDGE | |
|  | |

| WCDMA Band 5 | |
|---|---|
| Spectrum Plot of Measurement Value | |
| Channel: 4182 / Frequency (MHz): 836.4MHz | |
| WCDMA | HSDPA |
|  |  |
| HSUPA | |
|  | |

| LTE Band 5 | |
|---|---|
| Spectrum Plot of Measurement Value | |
| Channel: 20525 / Frequency (MHz): 836.5MHz | |
| QPSK | 16QAM |
|  |  |
| 64QAM | 256QAM |
|  |  |

| LTE Band 26 | |
|---|---|
| Spectrum Plot of Measurement Value | |
| Channel: 26915 / Frequency (MHz): 836.5MHz | |
| QPSK | 16QAM |
|  |  |
| 64QAM | 256QAM |
|  |  |

### 4.3 Frequency Stability Measurement

#### 4.3.1 Limits of Frequency Stability Measurement

1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

#### 4.3.2 Test Procedure

a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5 ℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

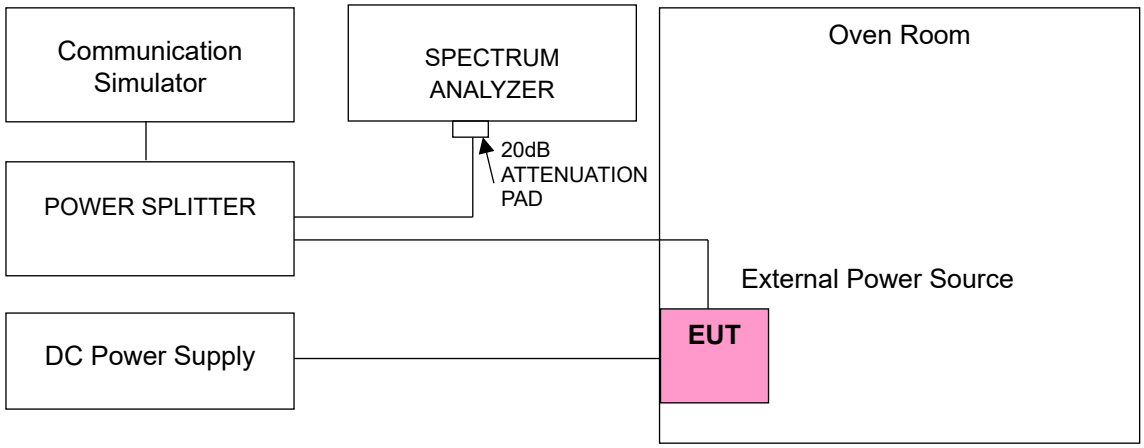
Note: The frequency error was recorded frequency error from the communication simulator.

#### 4.3.3 Test Instruments

| Description & Manufacturer | Model No. | Serial No. | Cal. Date | Cal. Due |
|---|---|---|---|---|
| Radio Communication Analyzer Anritsu | MT8820C | 6201010284 | Dec. 28, 2020 | Dec. 27, 2021 |
| Temperature & Humidity Chamber TERCHY | HRM-120RF | 931022 | Dec. 24, 2020 | Dec. 23, 2021 |
| Digital Multimeter Fluke | 87-III | 70360742 | Jun. 23, 2020 | Jun. 22, 2021 |
| DC Power Supply Topward | 6306A | 727263 | NA | NA |

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

#### 4.3.4 Test Setup



### 4.3.5 Test Results

Frequency Error vs. Voltage

| Voltage (Vdc) | CDMA | | | |
|---|---|---|---|---|
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 7.74 | 824.730004 | 0.005 | 848.280005 | 0.006 |
| 6.58 | 824.730003 | 0.004 | 848.280001 | 0.001 |
| 8.90 | 824.730002 | 0.002 | 848.280004 | 0.005 |

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | CDMA | | | |
|---|---|---|---|---|
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30 | 824.730003 | 0.004 | 848.280003 | 0.004 |
| -20 | 824.730005 | 0.006 | 848.280005 | 0.006 |
| -10 | 824.730003 | 0.004 | 848.280002 | 0.002 |
| 0 | 824.730002 | 0.002 | 848.280003 | 0.004 |
| 10 | 824.730002 | 0.002 | 848.280002 | 0.002 |
| 20 | 824.729995 | -0.006 | 848.279997 | -0.004 |
| 30 | 824.729999 | -0.001 | 848.279999 | -0.001 |
| 40 | 824.729998 | -0.002 | 848.279996 | -0.005 |
| 50 | 824.729999 | -0.001 | 848.279996 | -0.005 |

Frequency Error vs. Voltage

| Voltage (Vdc) | GSM | | | |
|---|---|---|---|---|
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 7.74 | 824.200002 | 0.002 | 848.800004 | 0.005 |
| 6.58 | 824.200001 | 0.001 | 848.800002 | 0.002 |
| 8.90 | 824.200005 | 0.006 | 848.800001 | 0.001 |

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | GSM | | | |
|---|---|---|---|---|
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30 | 824.200005 | 0.006 | 848.800001 | 0.001 |
| -20 | 824.200005 | 0.006 | 848.800004 | 0.005 |
| -10 | 824.200003 | 0.004 | 848.800005 | 0.006 |
| 0 | 824.200003 | 0.004 | 848.800002 | 0.002 |
| 10 | 824.200005 | 0.006 | 848.800001 | 0.001 |
| 20 | 824.199996 | -0.005 | 848.799998 | -0.002 |
| 30 | 824.199998 | -0.002 | 848.799997 | -0.004 |
| 40 | 824.199998 | -0.002 | 848.799996 | -0.005 |
| 50 | 824.199997 | -0.004 | 848.799995 | -0.006 |

Frequency Error vs. Voltage

| Voltage (Vdc) | EDGE | | | |
|---|---|---|---|---|
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 7.74 | 824.200003 | 0.004 | 848.800002 | 0.002 |
| 6.58 | 824.200005 | 0.006 | 848.800004 | 0.005 |
| 8.90 | 824.200001 | 0.001 | 848.800001 | 0.001 |

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | EDGE | | | |
|---|---|---|---|---|
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30 | 824.200005 | 0.006 | 848.800001 | 0.001 |
| -20 | 824.200002 | 0.002 | 848.800005 | 0.006 |
| -10 | 824.200002 | 0.002 | 848.800005 | 0.006 |
| 0 | 824.200004 | 0.005 | 848.800004 | 0.005 |
| 10 | 824.200005 | 0.006 | 848.800004 | 0.005 |
| 20 | 824.199998 | -0.002 | 848.799996 | -0.005 |
| 30 | 824.199995 | -0.006 | 848.799998 | -0.002 |
| 40 | 824.199998 | -0.002 | 848.799999 | -0.001 |
| 50 | 824.199995 | -0.006 | 848.799998 | -0.002 |

Frequency Error vs. Voltage

| Voltage (Vdc) | WCDMA Band 5 | | | |
|---|---|---|---|---|
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 7.74 | 826.400005 | 0.006 | 846.600004 | 0.005 |
| 6.58 | 826.400003 | 0.004 | 846.600001 | 0.001 |
| 8.90 | 826.400001 | 0.001 | 846.600002 | 0.002 |

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | WCDMA Band 5 | | | |
|---|---|---|---|---|
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30 | 826.400004 | 0.005 | 846.600001 | 0.001 |
| -20 | 826.400004 | 0.005 | 846.600001 | 0.001 |
| -10 | 826.400001 | 0.001 | 846.600004 | 0.005 |
| 0 | 826.400004 | 0.005 | 846.600003 | 0.004 |
| 10 | 826.400004 | 0.005 | 846.600005 | 0.006 |
| 20 | 826.399998 | -0.002 | 846.599997 | -0.004 |
| 30 | 826.399995 | -0.006 | 846.599996 | -0.005 |
| 40 | 826.399996 | -0.005 | 846.599996 | -0.005 |
| 50 | 826.399995 | -0.006 | 846.599999 | -0.001 |

Frequency Error vs. Voltage

| Voltage (Vdc) | LTE Band 5 | | | |
|---|---|---|---|---|
| | Channel Bandwidth 1.4 MHz | | | |
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 7.74 | 824.700003 | 0.004 | 848.300002 | 0.002 |
| 6.58 | 824.700001 | 0.001 | 848.300001 | 0.001 |
| 8.90 | 824.700005 | 0.006 | 848.300001 | 0.001 |

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | LTE Band 5 | | | |
|---|---|---|---|---|
| | Channel Bandwidth 1.4 MHz | | | |
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30 | 824.700001 | 0.001 | 848.300002 | 0.002 |
| -20 | 824.700002 | 0.002 | 848.300004 | 0.005 |
| -10 | 824.700002 | 0.002 | 848.300002 | 0.002 |
| 0 | 824.700005 | 0.006 | 848.300003 | 0.004 |
| 10 | 824.700003 | 0.004 | 848.300001 | 0.001 |
| 20 | 824.699999 | -0.001 | 848.299999 | -0.001 |
| 30 | 824.699997 | -0.004 | 848.299997 | -0.004 |
| 40 | 824.699996 | -0.005 | 848.299998 | -0.002 |
| 50 | 824.699998 | -0.002 | 848.299999 | -0.001 |

Frequency Error vs. Voltage

| Voltage (Vdc) | LTE Band 5 | | | |
|---|---|---|---|---|
| | Channel Bandwidth 3 MHz | | | |
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 7.74 | 825.500005 | 0.006 | 847.500004 | 0.005 |
| 6.58 | 825.500003 | 0.004 | 847.500001 | 0.001 |
| 8.90 | 825.500001 | 0.001 | 847.500004 | 0.005 |

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | LTE Band 5 | | | |
|---|---|---|---|---|
| | Channel Bandwidth 3 MHz | | | |
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30 | 825.500003 | 0.004 | 847.500003 | 0.004 |
| -20 | 825.500002 | 0.002 | 847.500003 | 0.004 |
| -10 | 825.500002 | 0.002 | 847.500005 | 0.006 |
| 0 | 825.500005 | 0.006 | 847.500001 | 0.001 |
| 10 | 825.500005 | 0.006 | 847.500005 | 0.006 |
| 20 | 825.499999 | -0.001 | 847.499997 | -0.004 |
| 30 | 825.499995 | -0.006 | 847.499997 | -0.004 |
| 40 | 825.499997 | -0.004 | 847.499995 | -0.006 |
| 50 | 825.499996 | -0.005 | 847.499996 | -0.005 |

Frequency Error vs. Voltage

| Voltage (Vdc) | LTE Band 5 | | | |
|---|---|---|---|---|
| | Channel Bandwidth 5 MHz | | | |
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 7.74 | 826.500005 | 0.006 | 846.500002 | 0.002 |
| 6.58 | 826.500001 | 0.001 | 846.500005 | 0.006 |
| 8.90 | 826.500001 | 0.001 | 846.500001 | 0.001 |

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | LTE Band 5 | | | |
|---|---|---|---|---|
| | Channel Bandwidth 5 MHz | | | |
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30 | 826.500001 | 0.001 | 846.500002 | 0.002 |
| -20 | 826.500004 | 0.005 | 846.500001 | 0.001 |
| -10 | 826.500002 | 0.002 | 846.500001 | 0.001 |
| 0 | 826.500005 | 0.006 | 846.500001 | 0.001 |
| 10 | 826.500004 | 0.005 | 846.500001 | 0.001 |
| 20 | 826.499997 | -0.004 | 846.499999 | -0.001 |
| 30 | 826.499996 | -0.005 | 846.499999 | -0.001 |
| 40 | 826.499996 | -0.005 | 846.499999 | -0.001 |
| 50 | 826.499999 | -0.001 | 846.499999 | -0.001 |

Frequency Error vs. Voltage

| Voltage (Vdc) | LTE Band 5 | | | |
|---|---|---|---|---|
| | Channel Bandwidth 10 MHz | | | |
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 7.74 | 829.000003 | 0.004 | 844.000001 | 0.001 |
| 6.58 | 829.000004 | 0.005 | 844.000005 | 0.006 |
| 8.90 | 829.000002 | 0.002 | 844.000005 | 0.006 |

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | LTE Band 5 | | | |
|---|---|---|---|---|
| | Channel Bandwidth 10 MHz | | | |
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30 | 829.000002 | 0.002 | 844.000003 | 0.004 |
| -20 | 829.000002 | 0.002 | 844.000002 | 0.002 |
| -10 | 829.000001 | 0.001 | 844.000003 | 0.004 |
| 0 | 829.000001 | 0.001 | 844.000001 | 0.001 |
| 10 | 829.000003 | 0.004 | 844.000002 | 0.002 |
| 20 | 828.999997 | -0.004 | 843.999998 | -0.002 |
| 30 | 828.999998 | -0.002 | 843.999998 | -0.002 |
| 40 | 828.999995 | -0.006 | 843.999997 | -0.004 |
| 50 | 828.999999 | -0.001 | 843.999996 | -0.005 |

Frequency Error vs. Voltage

| Voltage (Vdc) | LTE Band 26 | | | |
|---|---|---|---|---|
| | Channel Bandwidth: 1.4 MHz | | | |
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 7.74 | 824.700001 | 0.001 | 848.300005 | 0.006 |
| 6.58 | 824.700002 | 0.002 | 848.300004 | 0.005 |
| 8.90 | 824.700001 | 0.001 | 848.300005 | 0.006 |

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | LTE Band 26 | | | |
|---|---|---|---|---|
| | Channel Bandwidth: 1.4 MHz | | | |
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30 | 824.700001 | 0.001 | 848.300005 | 0.006 |
| -20 | 824.700002 | 0.002 | 848.300003 | 0.004 |
| -10 | 824.700004 | 0.005 | 848.300004 | 0.005 |
| 0 | 824.700005 | 0.006 | 848.300003 | 0.004 |
| 10 | 824.700004 | 0.005 | 848.300005 | 0.006 |
| 20 | 824.699997 | -0.004 | 848.299996 | -0.005 |
| 30 | 824.699998 | -0.002 | 848.299996 | -0.005 |
| 40 | 824.699997 | -0.004 | 848.299997 | -0.004 |
| 50 | 824.699999 | -0.001 | 848.299997 | -0.004 |

Frequency Error vs. Voltage

| Voltage (Vdc) | LTE Band 26 | | | |
|---|---|---|---|---|
| | Channel Bandwidth: 3 MHz | | | |
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 7.74 | 825.500002 | 0.002 | 847.500005 | 0.006 |
| 6.58 | 825.500005 | 0.006 | 847.500004 | 0.005 |
| 8.90 | 825.500004 | 0.005 | 847.500005 | 0.006 |

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | LTE Band 26 | | | |
|---|---|---|---|---|
| | Channel Bandwidth: 3 MHz | | | |
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30 | 825.500002 | 0.002 | 847.500002 | 0.002 |
| -20 | 825.500003 | 0.004 | 847.500003 | 0.004 |
| -10 | 825.500001 | 0.001 | 847.500001 | 0.001 |
| 0 | 825.500003 | 0.004 | 847.500004 | 0.005 |
| 10 | 825.500004 | 0.005 | 847.500005 | 0.006 |
| 20 | 825.499999 | -0.001 | 847.499997 | -0.004 |
| 30 | 825.499998 | -0.002 | 847.499996 | -0.005 |
| 40 | 825.499998 | -0.002 | 847.499998 | -0.002 |
| 50 | 825.499998 | -0.002 | 847.499998 | -0.002 |

Frequency Error vs. Voltage

| Voltage (Vdc) | LTE Band 26 | | | |
|---|---|---|---|---|
| | Channel Bandwidth: 5 MHz | | | |
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 7.74 | 826.500002 | 0.002 | 846.500004 | 0.005 |
| 6.58 | 826.500001 | 0.001 | 846.500003 | 0.004 |
| 8.90 | 826.500004 | 0.005 | 846.500003 | 0.004 |

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | LTE Band 26 | | | |
|---|---|---|---|---|
| | Channel Bandwidth: 5 MHz | | | |
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30 | 826.500004 | 0.005 | 846.500002 | 0.002 |
| -20 | 826.500001 | 0.001 | 846.500001 | 0.001 |
| -10 | 826.500004 | 0.005 | 846.500004 | 0.005 |
| 0 | 826.500002 | 0.002 | 846.500002 | 0.002 |
| 10 | 826.500002 | 0.002 | 846.500003 | 0.004 |
| 20 | 826.499995 | -0.006 | 846.499997 | -0.004 |
| 30 | 826.499998 | -0.002 | 846.499998 | -0.002 |
| 40 | 826.499995 | -0.006 | 846.499995 | -0.006 |
| 50 | 826.499998 | -0.002 | 846.499997 | -0.004 |

Frequency Error vs. Voltage

| Voltage (Vdc) | LTE Band 26 | | | |
|---|---|---|---|---|
| | Channel Bandwidth: 10 MHz | | | |
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 7.74 | 829.000001 | 0.001 | 844.000005 | 0.006 |
| 6.58 | 829.000005 | 0.006 | 844.000004 | 0.005 |
| 8.90 | 829.000002 | 0.002 | 844.000002 | 0.002 |

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | LTE Band 26 | | | |
|---|---|---|---|---|
| | Channel Bandwidth: 10 MHz | | | |
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30 | 829.000005 | 0.006 | 844.000001 | 0.001 |
| -20 | 829.000001 | 0.001 | 844.000005 | 0.006 |
| -10 | 829.000003 | 0.004 | 844.000004 | 0.005 |
| 0 | 829.000002 | 0.002 | 844.000002 | 0.002 |
| 10 | 829.000001 | 0.001 | 844.000004 | 0.005 |
| 20 | 828.999995 | -0.006 | 843.999995 | -0.006 |
| 30 | 828.999997 | -0.004 | 843.999995 | -0.006 |
| 40 | 828.999995 | -0.006 | 843.999995 | -0.006 |
| 50 | 828.999998 | -0.002 | 843.999998 | -0.002 |

Frequency Error vs. Voltage

| Voltage (Vdc) | LTE Band 26 | | | |
|---|---|---|---|---|
| | Channel Bandwidth: 15 MHz | | | |
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| 7.74 | 831.500005 | 0.006 | 841.500005 | 0.006 |
| 6.58 | 831.500002 | 0.002 | 841.500004 | 0.005 |
| 8.90 | 831.500003 | 0.004 | 841.500004 | 0.005 |

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

| Temp. (℃) | LTE Band 26 | | | |
|---|---|---|---|---|
| | Channel Bandwidth: 15 MHz | | | |
| | Low Channel | | High Channel | |
| | Frequency (MHz) | Frequency Error (ppm) | Frequency (MHz) | Frequency Error (ppm) |
| -30 | 831.500001 | 0.001 | 841.500002 | 0.002 |
| -20 | 831.500001 | 0.001 | 841.500001 | 0.001 |
| -10 | 831.500004 | 0.005 | 841.500004 | 0.005 |
| 0 | 831.500001 | 0.001 | 841.500002 | 0.002 |
| 10 | 831.500001 | 0.001 | 841.500003 | 0.004 |
| 20 | 831.499999 | -0.001 | 841.499998 | -0.002 |
| 30 | 831.499997 | -0.004 | 841.499997 | -0.004 |
| 40 | 831.499998 | -0.002 | 841.499995 | -0.006 |
| 50 | 831.499997 | -0.004 | 841.499995 | -0.006 |

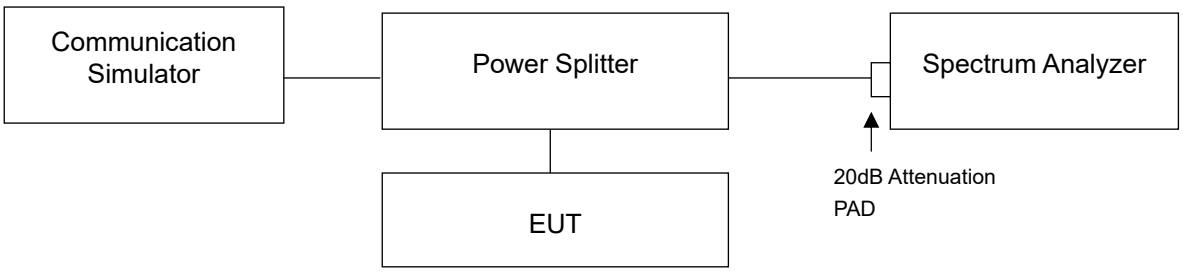
## 4.4 Occupied Bandwidth Measurement

### 4.4.1 Test Procedure

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Measurement method, please refer to section 5.4.4 of ANSI C63.26. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

For the 26dBc bandwidth measurement method, please refer to section 5.4.3 of ANSI C63.26.

### 4.4.2 Test Setup

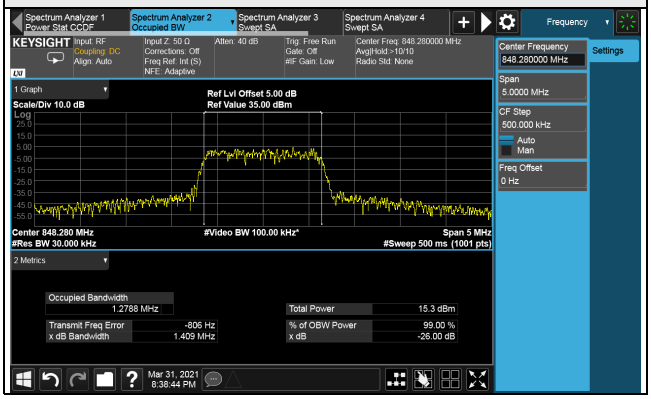


### 4.4.3 Test Result

Occupied Bandwidth

| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) |
|---|---|---|
| | | CDMA |
| 1014 | 824.73 | 1.26 |
| 384 | 836.52 | 1.26 |
| 776 | 848.28 | 1.27 |

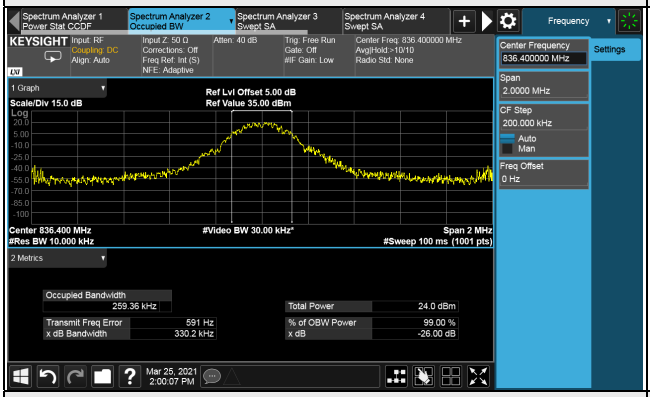
| Spectrum Plot Of Worst Value |
|---|
| CDMA |



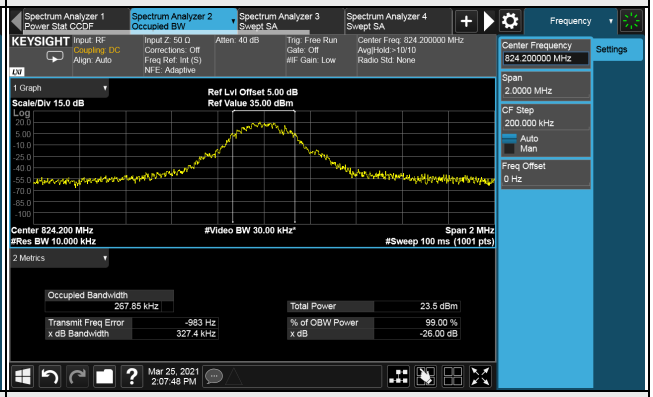
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (kHz) | | |
|---|---|---|---|---|
| | | GSM | GPRS | EDGE |
| 128 | 824.2 | 256.37 | 267.85 | 270.27 |
| 189 | 836.4 | 259.36 | 254.40 | 248.44 |
| 251 | 848.8 | 256.28 | 254.78 | 260.61 |

Spectrum Plot of Worst Value

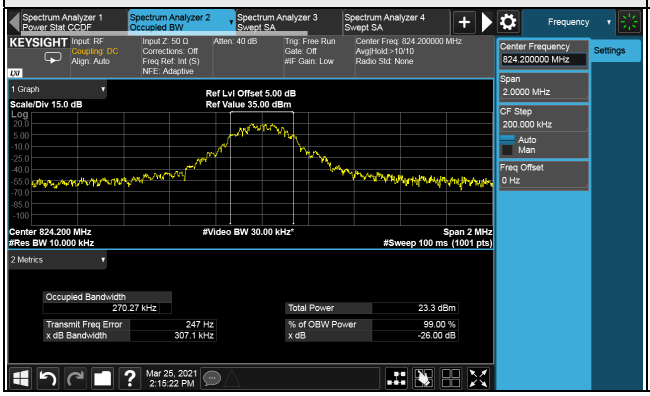
GSM




GPRS



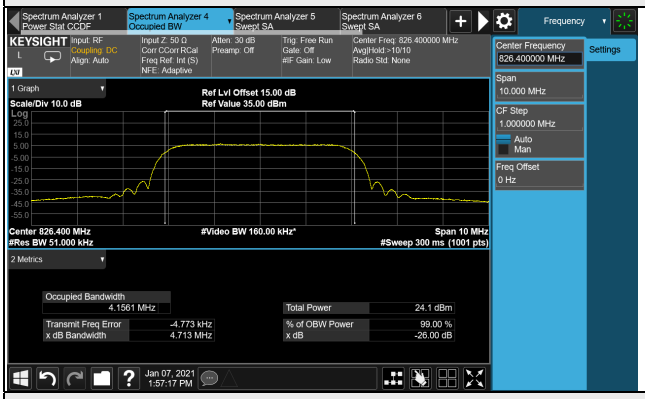

EDGE



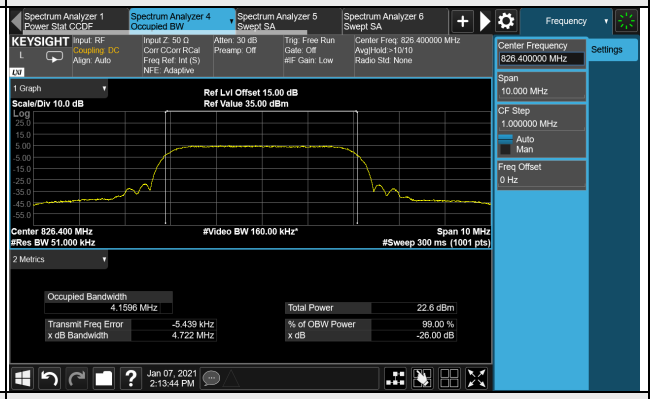
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | | |
|---|---|---|---|---|
| | | WCDMA | HSDPA | HSUPA |
| 4132 | 826.4 | 4.15 | 4.15 | 4.15 |
| 4182 | 836.4 | 4.15 | 4.14 | 4.14 |
| 4233 | 846.6 | 4.14 | 4.14 | 4.14 |

Spectrum Plot of Worst Value

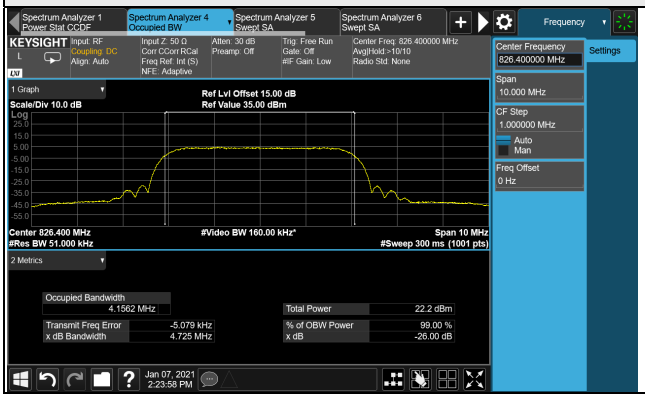
WCDMA




HSDPA



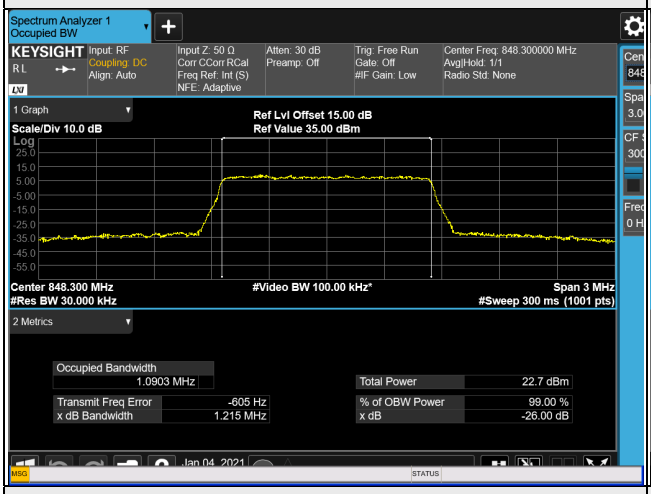

HSUPA



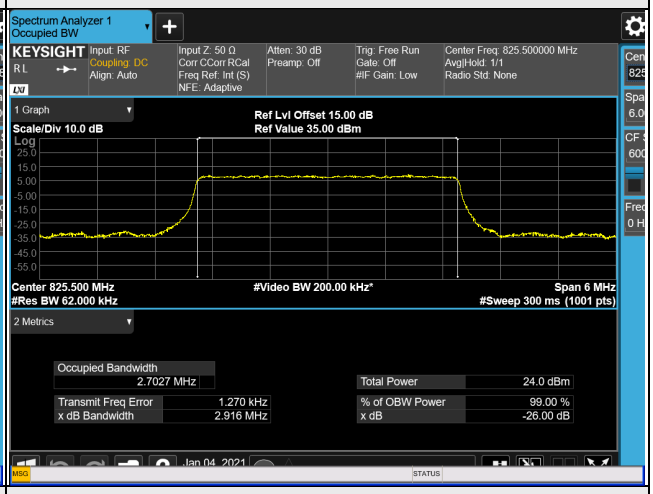
| LTE Band 5, Channel Bandwidth 1.4MHz | | | | | |
|---|---|---|---|---|---|
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| 20407 | 824.7 | 1.09 | 1.09 | 1.09 | 1.08 |
| 20525 | 836.5 | 1.09 | 1.09 | 1.09 | 1.08 |
| 20643 | 848.3 | 1.09 | 1.09 | 1.09 | 1.09 |
| LTE Band 5, Channel Bandwidth 3MHz | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| 20415 | 825.5 | 2.70 | 2.69 | 2.70 | 2.70 |
| 20525 | 836.5 | 2.70 | 2.69 | 2.70 | 2.70 |
| 20635 | 847.5 | 2.70 | 2.69 | 2.70 | 2.70 |
| LTE Band 5, Channel Bandwidth 5MHz | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| 20425 | 826.5 | 4.49 | 4.49 | 4.50 | 4.49 |
| 20525 | 836.5 | 4.48 | 4.49 | 4.49 | 4.48 |
| 20625 | 846.5 | 4.48 | 4.48 | 4.49 | 4.48 |
| LTE Band 5, Channel Bandwidth 10MHz | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| 20450 | 829.0 | 8.97 | 8.97 | 8.97 | 8.96 |
| 20525 | 836.5 | 8.95 | 8.95 | 8.95 | 8.94 |
| 20600 | 844.0 | 8.95 | 8.96 | 8.96 | 8.96 |

## Spectrum Plot of Worst Value

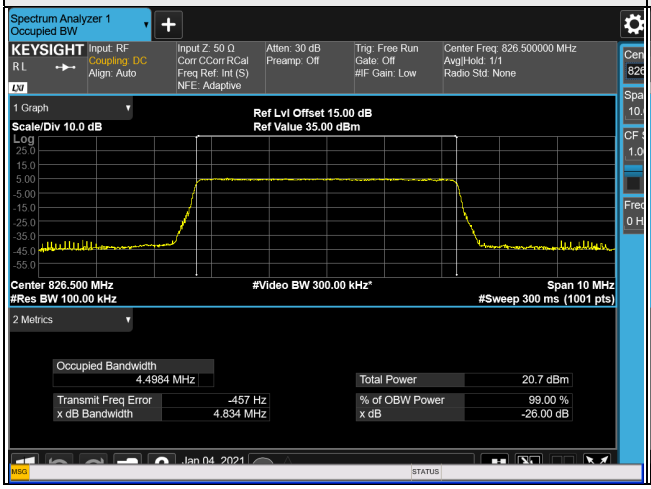
### 1.4MHz / 16QAM



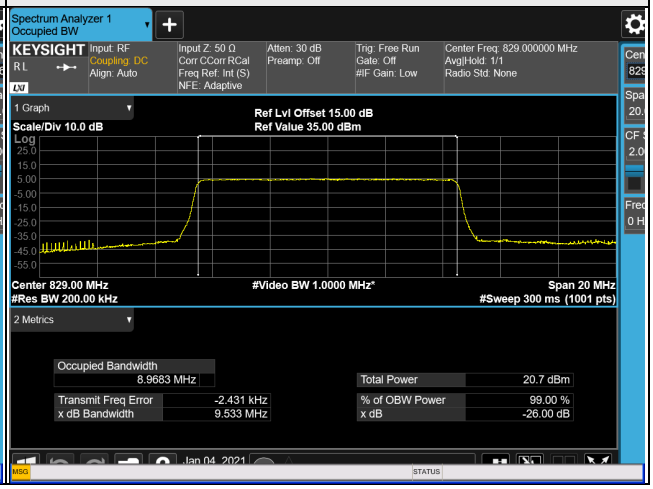

### 3MHz / QPSK




### 5MHz / 64QAM



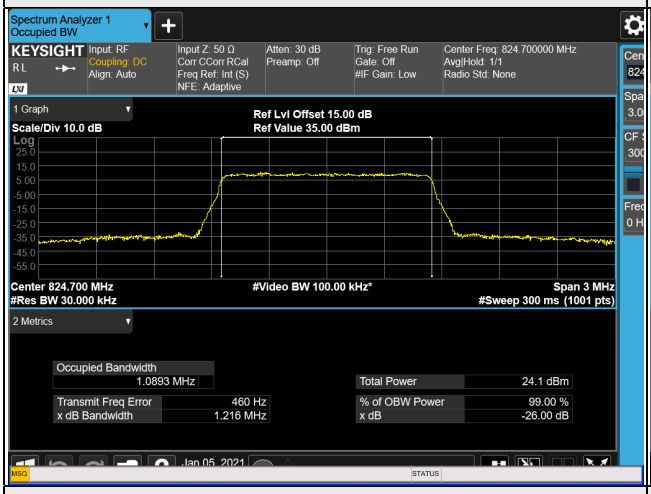

### 10MHz / 64QAM



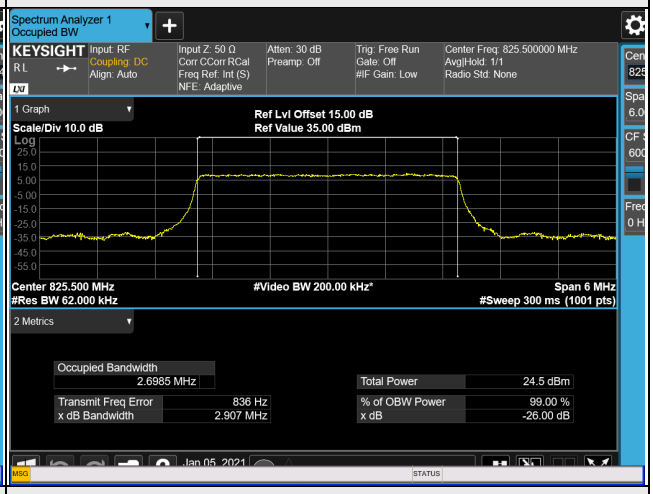
| LTE Band 26, Channel Bandwidth 1.4MHz | | | | | |
|---|---|---|---|---|---|
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| 26797 | 824.7 | 1.09 | 1.09 | 1.09 | 1.08 |
| 26915 | 836.5 | 1.09 | 1.09 | 1.09 | 1.09 |
| 27033 | 848.3 | 1.09 | 1.09 | 1.09 | 1.08 |
| LTE Band 26, Channel Bandwidth 3MHz | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| 26805 | 825.5 | 2.70 | 2.69 | 2.69 | 2.70 |
| 26915 | 836.5 | 2.70 | 2.69 | 2.70 | 2.69 |
| 27025 | 847.5 | 2.70 | 2.70 | 2.69 | 2.69 |
| LTE Band 26, Channel Bandwidth 5MHz | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| 26815 | 826.5 | 4.49 | 4.49 | 4.50 | 4.49 |
| 26915 | 836.5 | 4.48 | 4.48 | 4.50 | 4.49 |
| 27015 | 846.5 | 4.48 | 4.49 | 4.49 | 4.48 |
| LTE Band 26, Channel Bandwidth 10MHz | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| 26840 | 829.0 | 8.97 | 8.97 | 8.97 | 8.96 |
| 26915 | 836.5 | 8.95 | 8.95 | 8.95 | 8.94 |
| 26990 | 844.0 | 8.95 | 8.96 | 8.96 | 8.96 |
| LTE Band 26, Channel Bandwidth 15MHz | | | | | |
| Channel | Frequency (MHz) | 99% Occupied Bandwidth (MHz) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| 26865 | 831.5 | 13.46 | 13.44 | 13.44 | 13.45 |
| 26915 | 836.5 | 13.44 | 13.42 | 13.42 | 13.43 |
| 26965 | 841.5 | 13.44 | 13.43 | 13.43 | 13.43 |

## Spectrum Plot of Worst Value

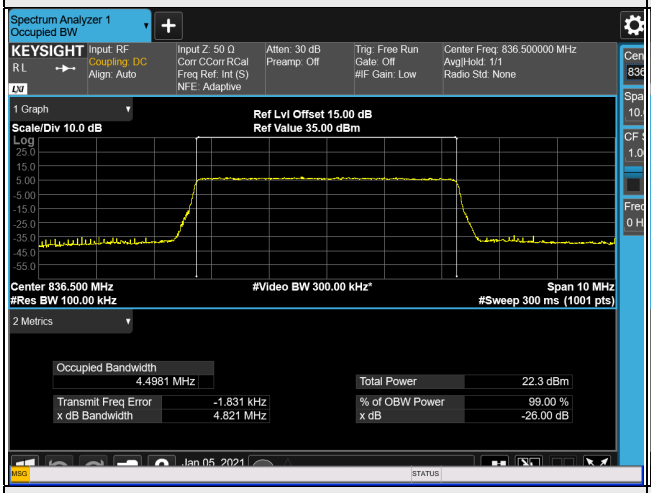
### 1.4MHz / 16QAM



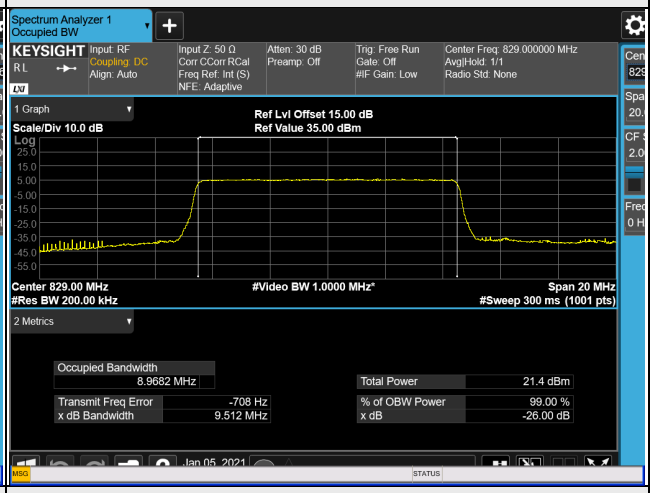

### 3MHz / QPSK



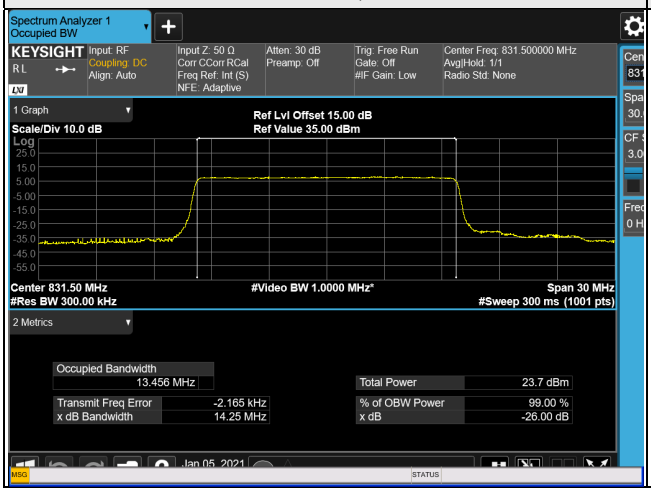

### 5MHz / 64QAM




### 10MHz / 64QAM



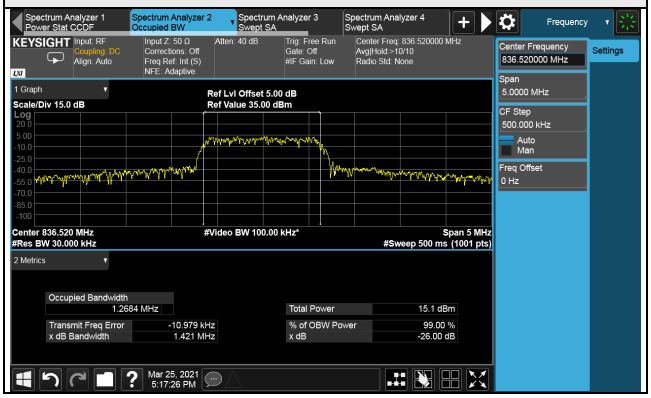

### 15MHz / QPSK



## 26dB Bandwidth

| Channel | Frequency (MHz) | 26dB Bandwidth (MHz) |
|---|---|---|
| | | CDMA |
| 1014 | 824.73 | 1.41 |
| 384 | 836.52 | 1.42 |
| 776 | 848.28 | 1.40 |

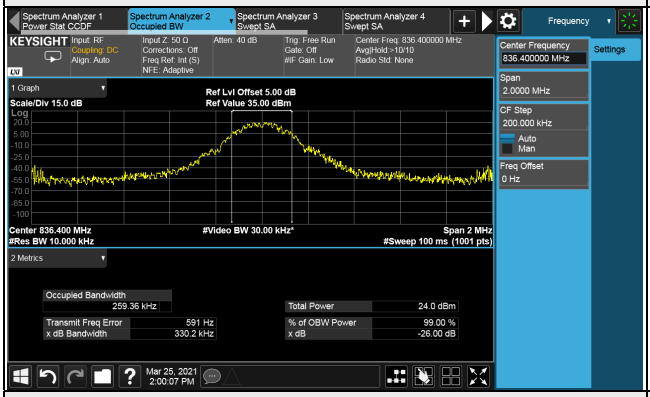
| Spectrum Plot Of Worst Value |
|---|
| CDMA |



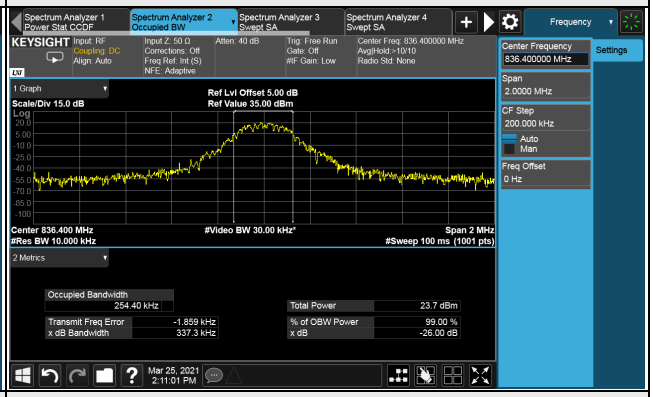
| Channel | Frequency (MHz) | 26dB Bandwidth (kHz) | | |
|---|---|---|---|---|
| | | GSM | GPRS | EDGE |
| 128 | 824.2 | 317.70 | 327.40 | 307.10 |
| 189 | 836.4 | 330.20 | 337.30 | 308.30 |
| 251 | 848.8 | 324.20 | 326.70 | 319.90 |

Spectrum Plot of Worst Value

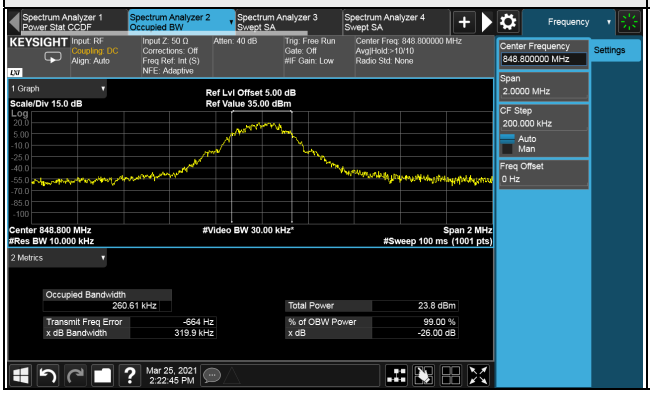
GSM




GPRS



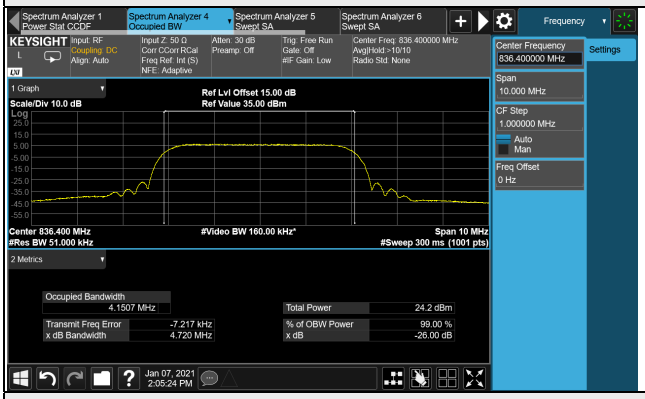

EDGE



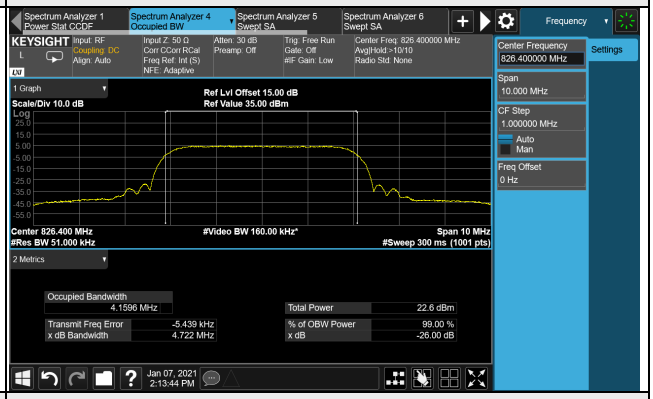
| Channel | Frequency (MHz) | 26dB Bandwidth (MHz) | | |
|---|---|---|---|---|
| | | WCDMA | HSDPA | HSUPA |
| 4132 | 826.4 | 4.71 | 4.72 | 4.73 |
| 4182 | 836.4 | 4.72 | 4.72 | 4.72 |
| 4233 | 846.6 | 4.71 | 4.72 | 4.72 |

Spectrum Plot of Worst Value

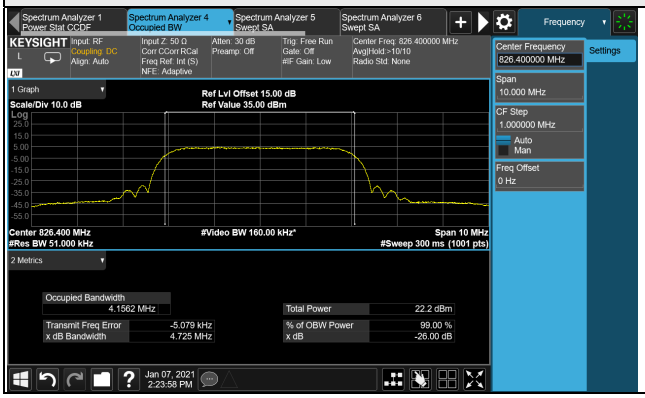
WCDMA



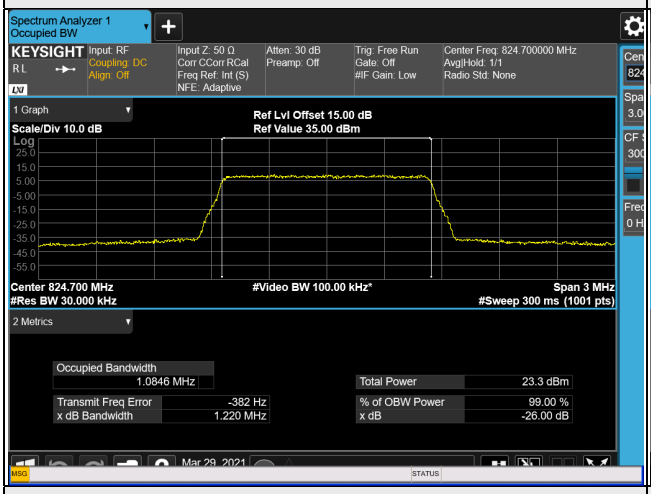
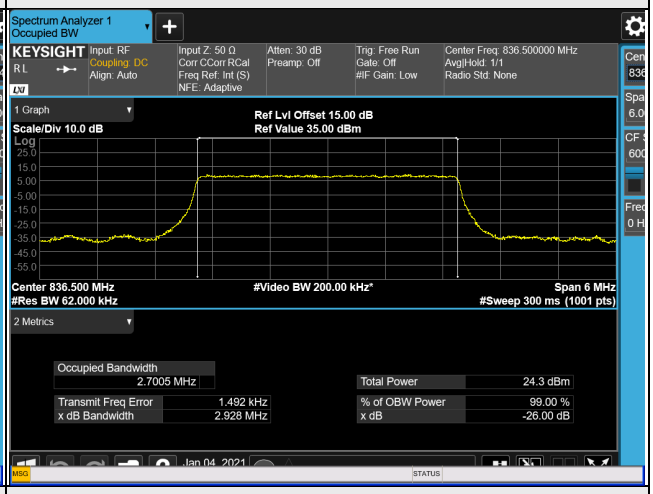
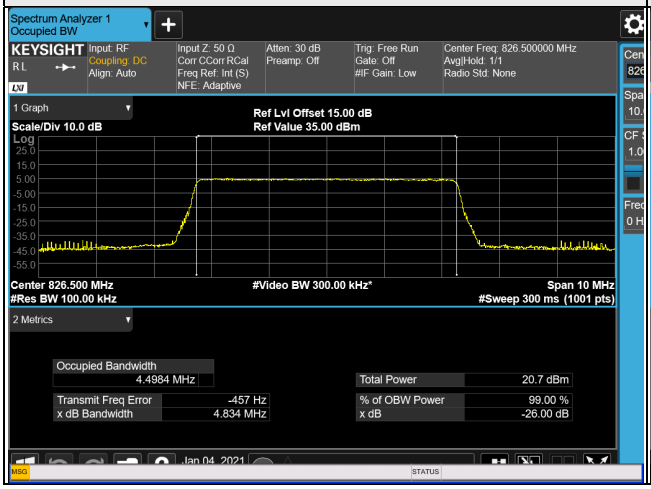
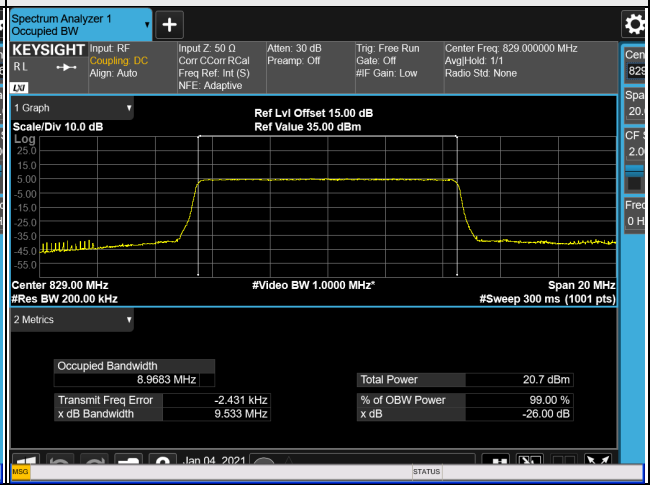

HSDPA




HSUPA



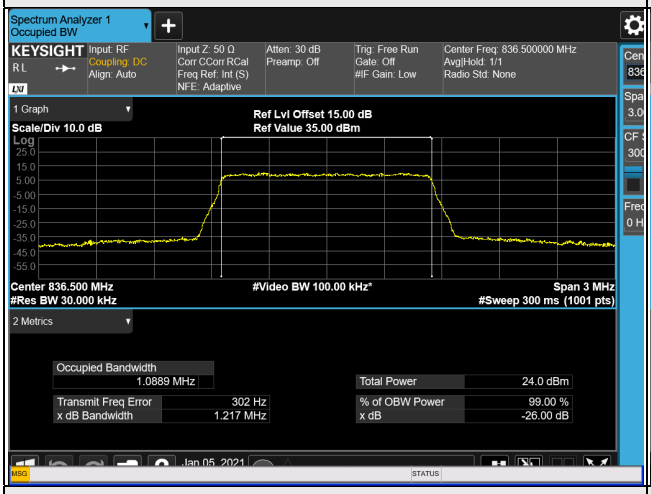
| LTE Band 5, Channel Bandwidth 1.4MHz | | | | | |
|---|---|---|---|---|---|
| Channel | Frequency (MHz) | 26dB Bandwidth (MHz) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| 20407 | 824.7 | 1.21 | 1.21 | 1.21 | 1.22 |
| 20525 | 836.5 | 1.21 | 1.21 | 1.21 | 1.20 |
| 20643 | 848.3 | 1.22 | 1.22 | 1.21 | 1.20 |
| LTE Band 5, Channel Bandwidth 3MHz | | | | | |
| Channel | Frequency (MHz) | 26dB Bandwidth (MHz) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| 20415 | 825.5 | 2.92 | 2.92 | 2.90 | 2.91 |
| 20525 | 836.5 | 2.93 | 2.93 | 2.91 | 2.92 |
| 20635 | 847.5 | 2.92 | 2.92 | 2.91 | 2.91 |
| LTE Band 5, Channel Bandwidth 5MHz | | | | | |
| Channel | Frequency (MHz) | 26dB Bandwidth (MHz) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| 20425 | 826.5 | 4.82 | 4.81 | 4.83 | 4.81 |
| 20525 | 836.5 | 4.80 | 4.81 | 4.82 | 4.80 |
| 20625 | 846.5 | 4.80 | 4.81 | 4.81 | 4.80 |
| LTE Band 5, Channel Bandwidth 10MHz | | | | | |
| Channel | Frequency (MHz) | 26dB Bandwidth (MHz) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| 20450 | 829.0 | 9.50 | 9.51 | 9.53 | 9.51 |
| 20525 | 836.5 | 9.50 | 9.49 | 9.51 | 9.50 |
| 20600 | 844.0 | 9.49 | 9.51 | 9.52 | 9.51 |

| Spectrum Plot of Worst Value | |
|---|---|
| 1.4MHz / 256QAM | 3MHz / QPSK |
|  |  |
| 5MHz / 64QAM | 10MHz / 64QAM |
|  |  |

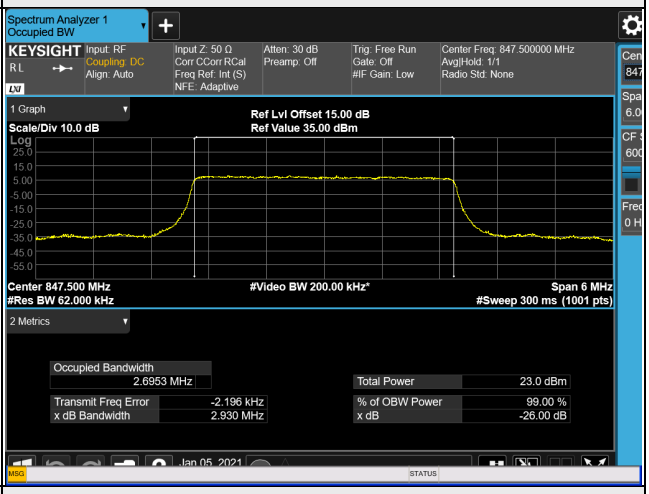
| LTE Band 26, Channel Bandwidth 1.4MHz | | | | | |
|---|---|---|---|---|---|
| Channel | Frequency (MHz) | 26dB Bandwidth (MHz) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| 26797 | 824.7 | 1.21 | 1.22 | 1.21 | 1.21 |
| 26915 | 836.5 | 1.21 | 1.22 | 1.22 | 1.21 |
| 27033 | 848.3 | 1.21 | 1.21 | 1.21 | 1.21 |
| LTE Band 26, Channel Bandwidth 3MHz | | | | | |
| Channel | Frequency (MHz) | 26dB Bandwidth (MHz) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| 26805 | 825.5 | 2.91 | 2.93 | 2.89 | 2.91 |
| 26915 | 836.5 | 2.93 | 2.92 | 2.90 | 2.91 |
| 27025 | 847.5 | 2.93 | 2.93 | 2.90 | 2.92 |
| LTE Band 26, Channel Bandwidth 5MHz | | | | | |
| Channel | Frequency (MHz) | 26dB Bandwidth (MHz) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| 26815 | 826.5 | 4.81 | 4.81 | 4.85 | 4.80 |
| 26915 | 836.5 | 4.78 | 4.81 | 4.82 | 4.81 |
| 27015 | 846.5 | 4.79 | 4.80 | 4.79 | 4.81 |
| LTE Band 26, Channel Bandwidth 10MHz | | | | | |
| Channel | Frequency (MHz) | 26dB Bandwidth (MHz) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| 26840 | 829.0 | 9.51 | 9.51 | 9.51 | 9.50 |
| 26915 | 836.5 | 9.49 | 9.49 | 9.51 | 9.50 |
| 26990 | 844.0 | 9.50 | 9.51 | 9.51 | 9.50 |
| LTE Band 26, Channel Bandwidth 15MHz | | | | | |
| Channel | Frequency (MHz) | 26dB Bandwidth (MHz) | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM |
| 26865 | 831.5 | 14.25 | 14.25 | 14.23 | 14.26 |
| 26915 | 836.5 | 14.23 | 14.22 | 14.23 | 14.23 |
| 26965 | 841.5 | 14.23 | 14.24 | 14.22 | 14.24 |

## Spectrum Plot of Worst Value

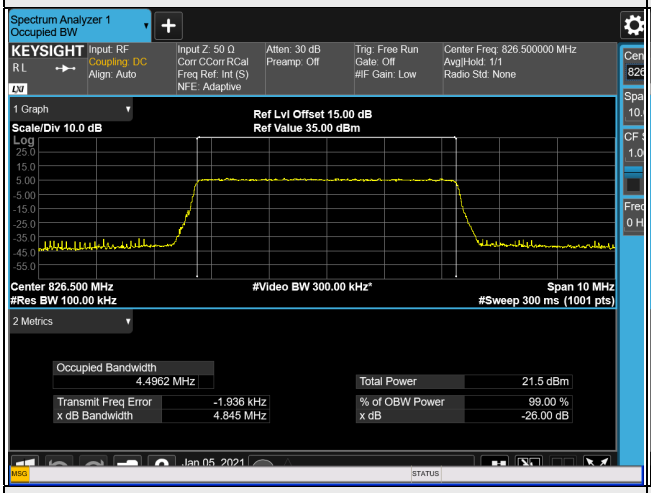
### 1.4MHz / 16QAM



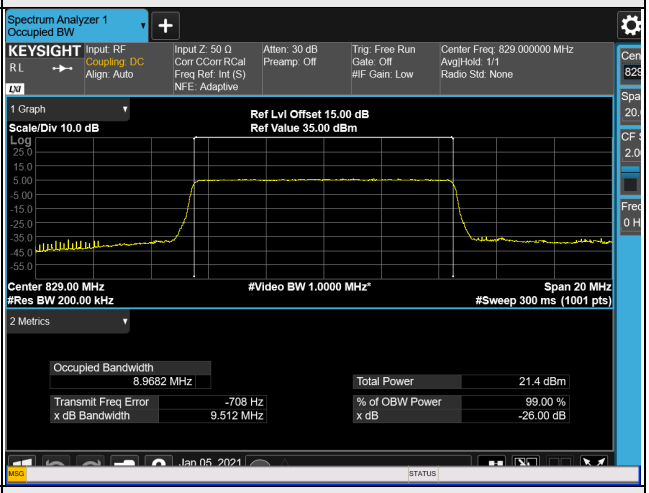

### 3MHz / 16QAM



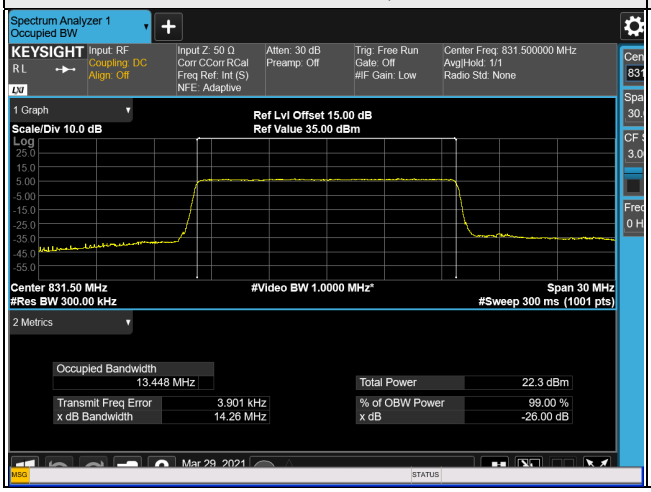

### 5MHz / 64QAM




### 10MHz / 64QAM




### 15MHz / 256QAM

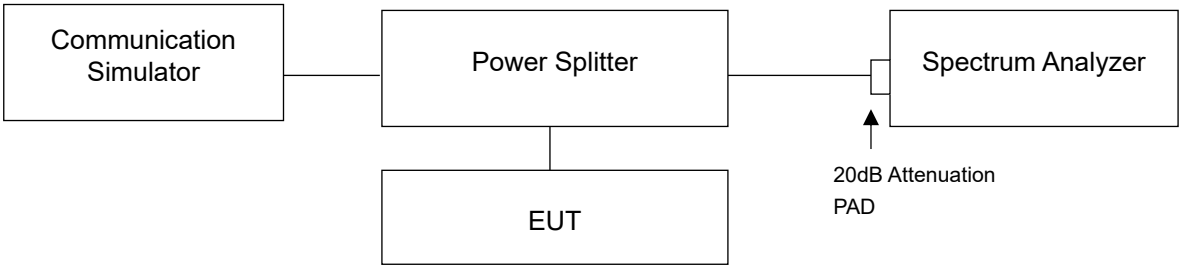


## 4.5 Band Edge Measurement

### 4.5.1 Limits of Band Edge Measurement

Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

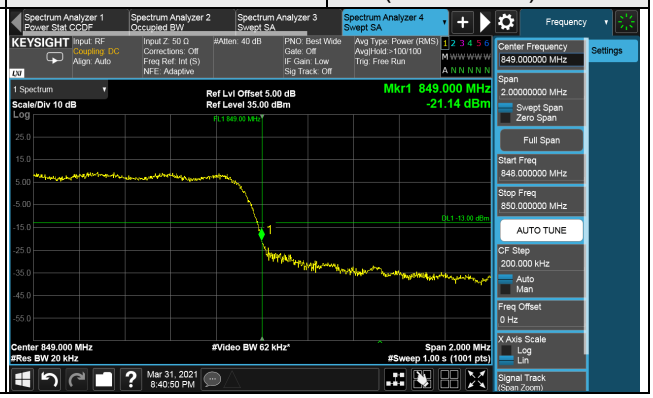
### 4.5.2 Test Setup

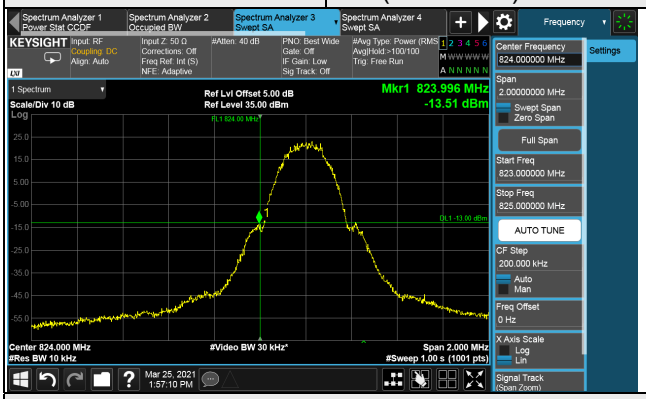
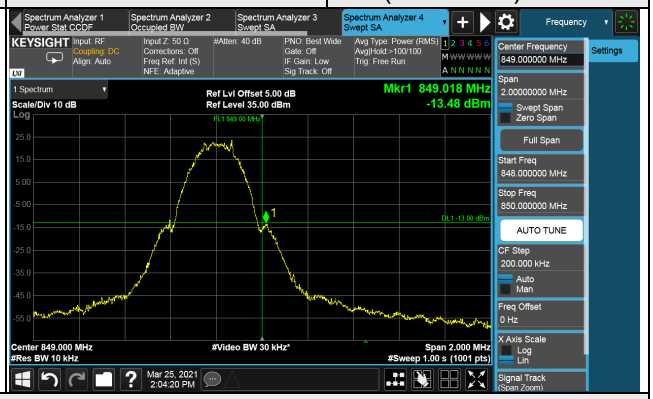
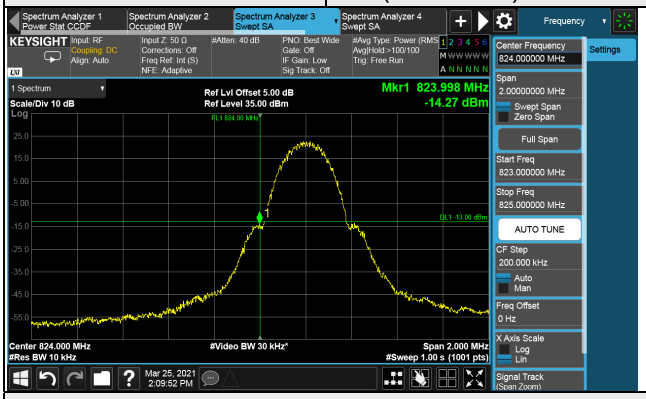
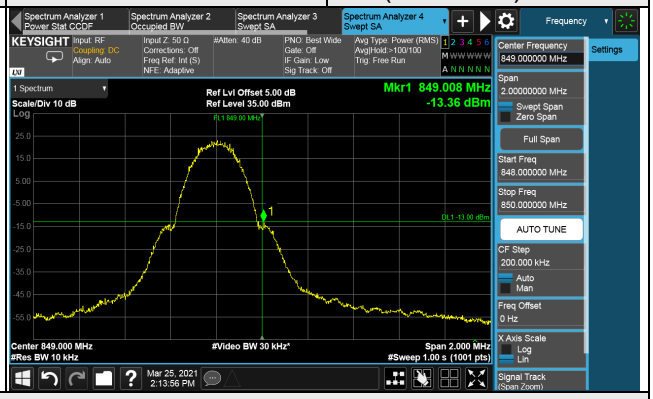
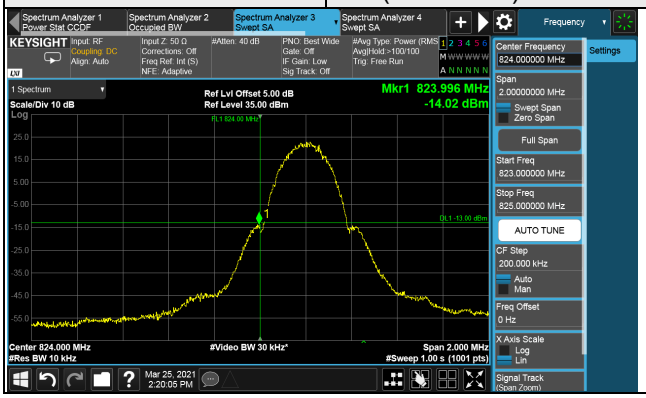
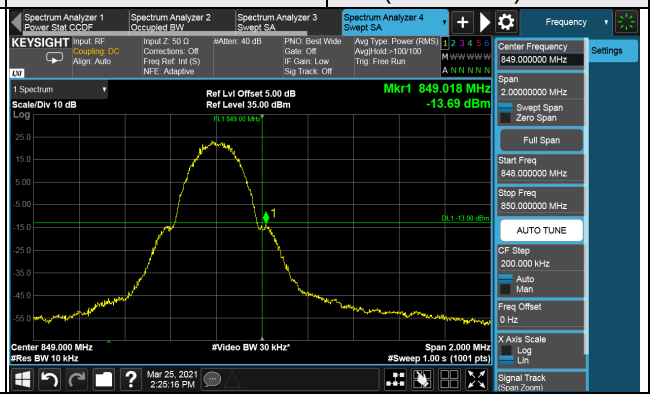


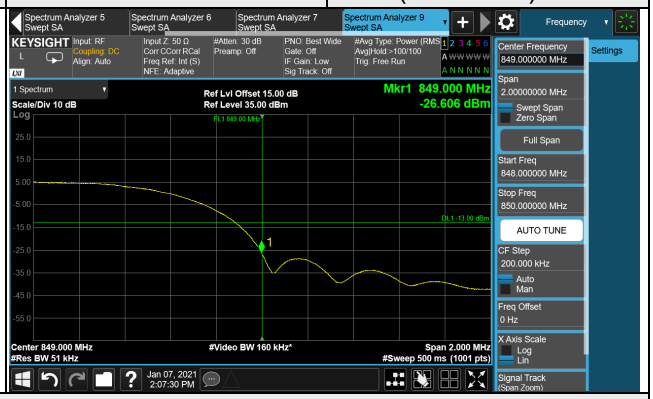
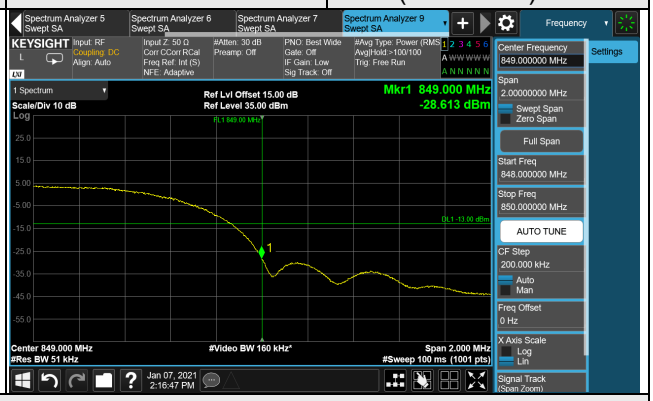
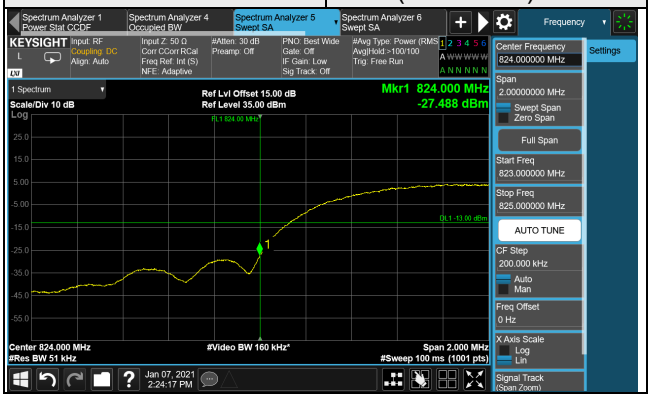
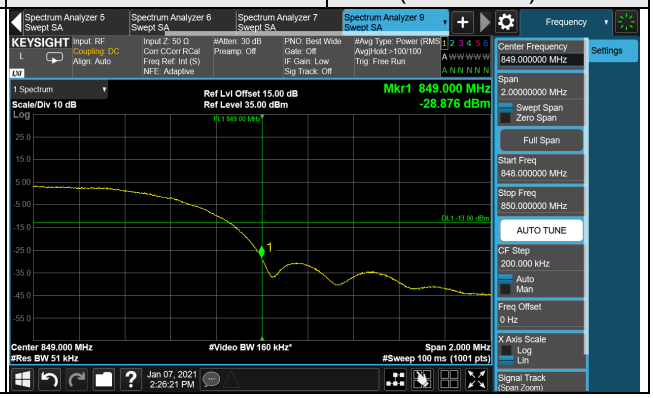

### 4.5.3 Test Procedures

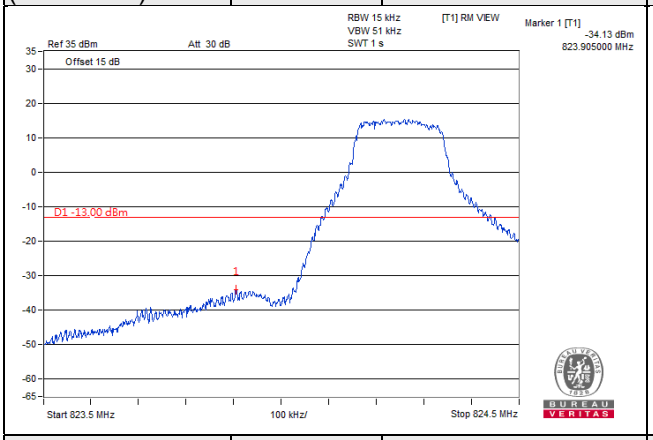
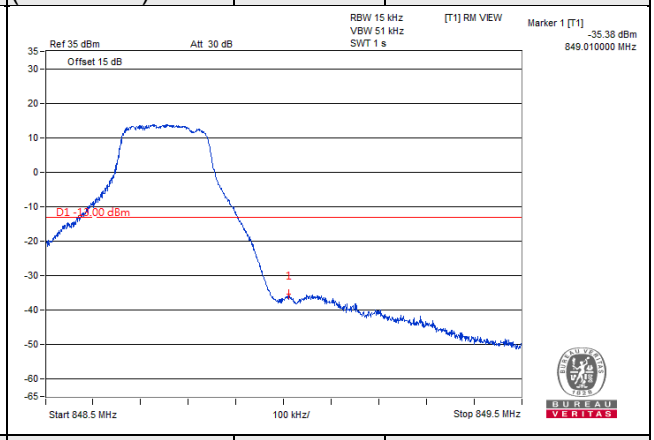
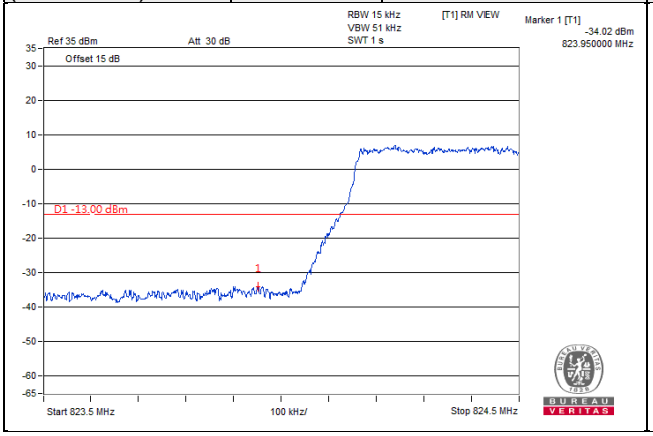
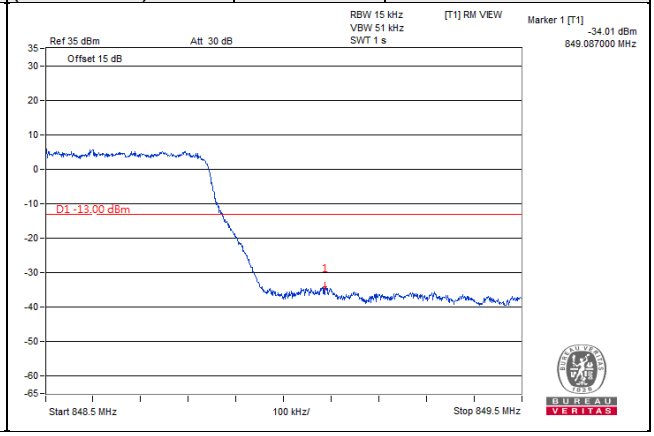
a. All measurements were done at low and high operational frequency range.
b. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 20kHz and VB of the spectrum is 62kHz (CDMA).
c. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 10kHz and VB of the spectrum is 30kHz (GSM / GPRS / EDGE).
d. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 51kHz and VB of the spectrum is 160kHz (WCDMA / HSDPA / HSUPA).
e. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 15kHz and VB of the spectrum is 51kHz (LTE Channel Bandwidth 1.4MHz).
f. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 30kHz and VB of the spectrum is 100kHz (LTE Channel Bandwidth 3MHz).
g. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 51kHz and VB of the spectrum is 160kHz (LTE Channel Bandwidth 5MHz).
h. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (LTE Channel Bandwidth 10MHz).
i. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 150kHz and VB of the spectrum is 470kHz (LTE Channel Bandwidth 15MHz).
j. Record the max trace plot into the test report.

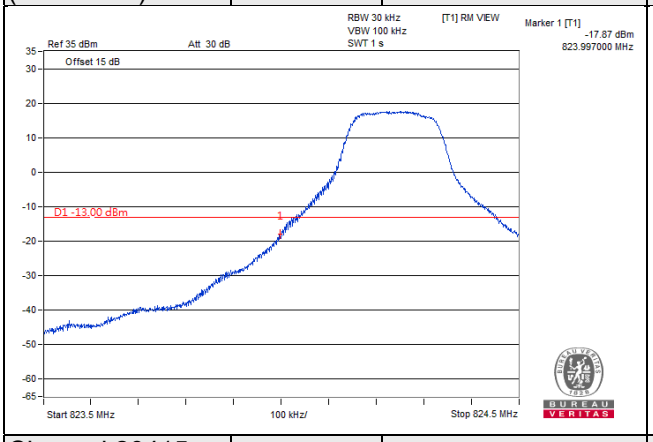
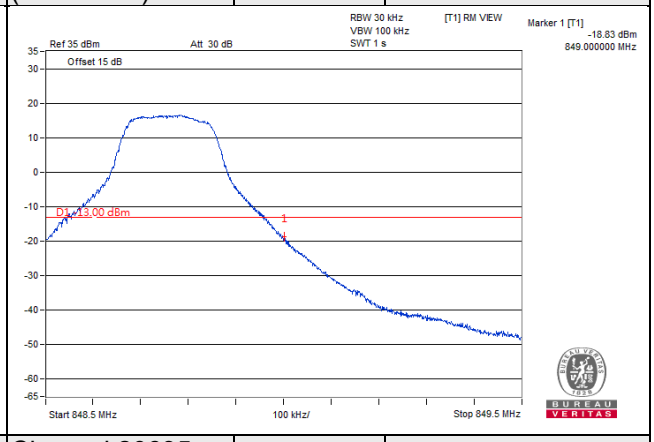
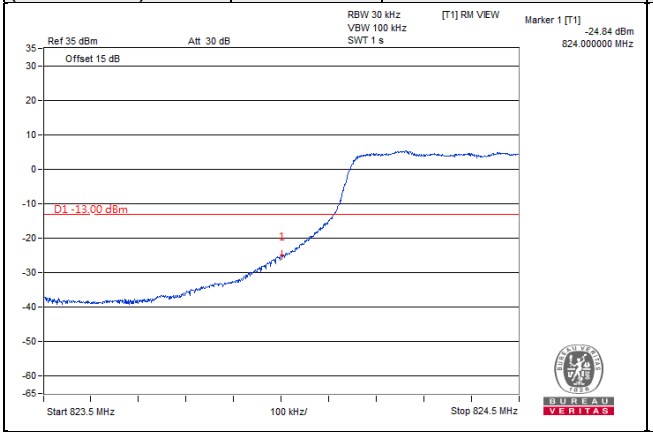
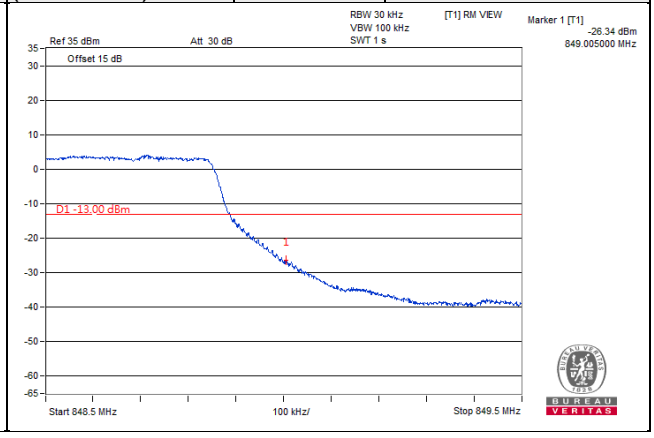
### 4.5.4 Test Results

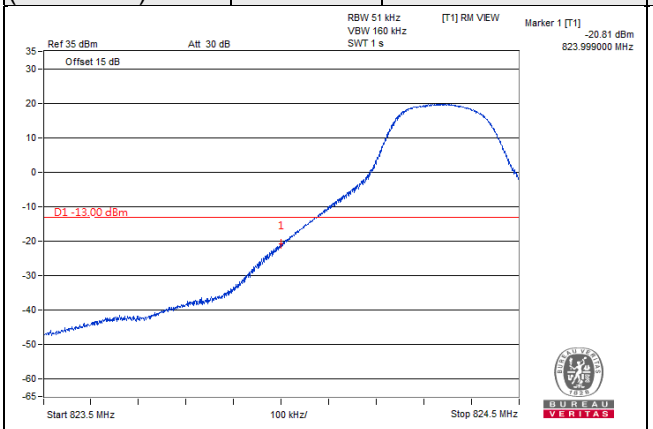
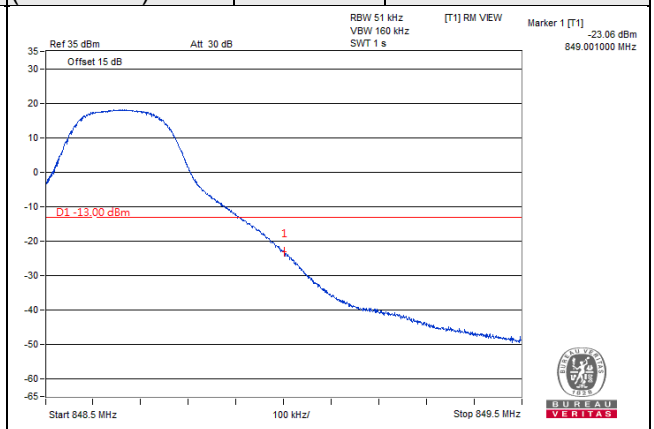
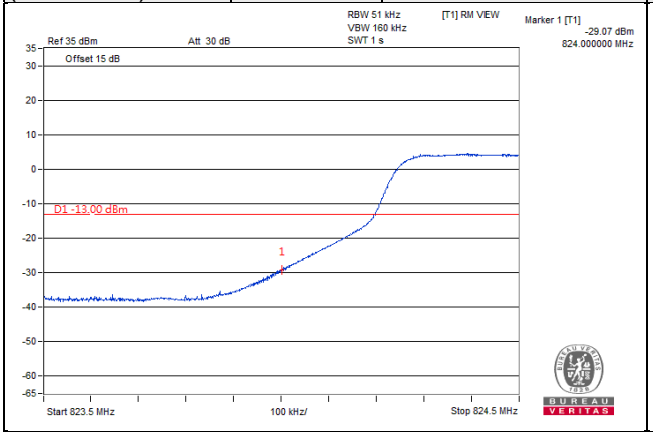
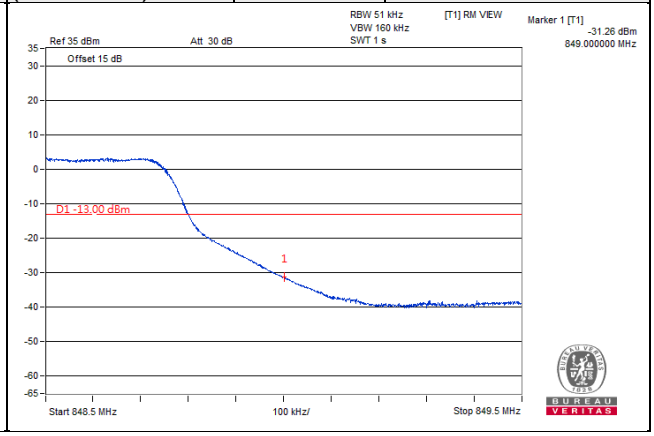
| CDMA | | | |
|---|---|---|---|
| Channel | 1014 (824.73MHz) | Channel | 776 (848.28MHz) |
|  | |  | |

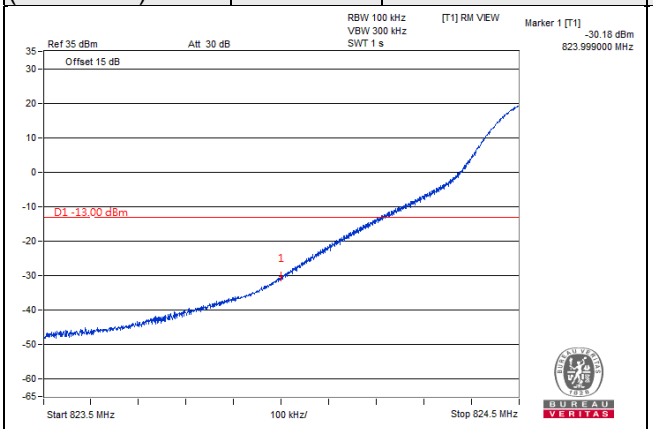
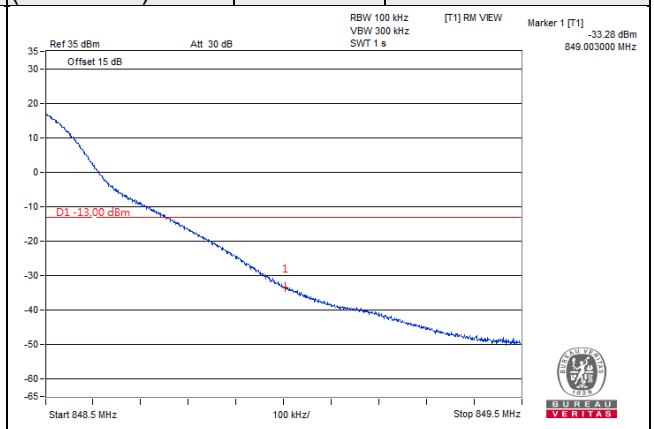
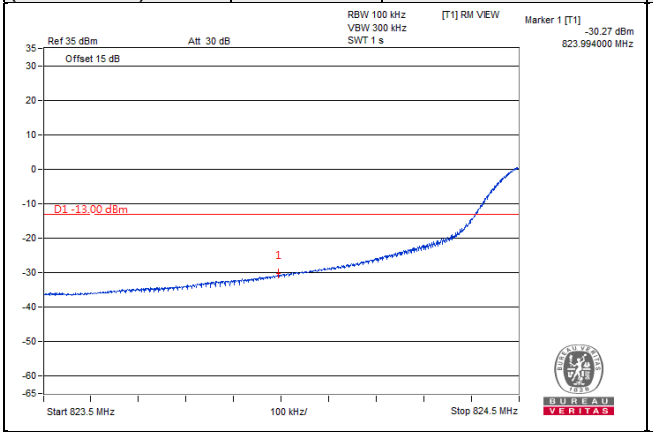
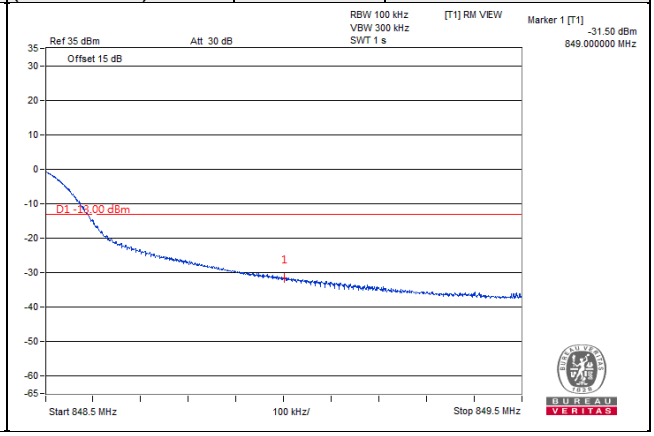
| GSM | | | |
|---|---|---|---|
| Channel | 128 (824.2MHz) | Channel | 251 (848.8MHz) |
|  | |  | |
| GPRS | | | |
| Channel | 128 (824.2MHz) | Channel | 251 (848.8MHz) |
|  | |  | |
| EDGE | | | |
| Channel | 128 (824.2MHz) | Channel | 251 (848.8MHz) |
|  | |  | |

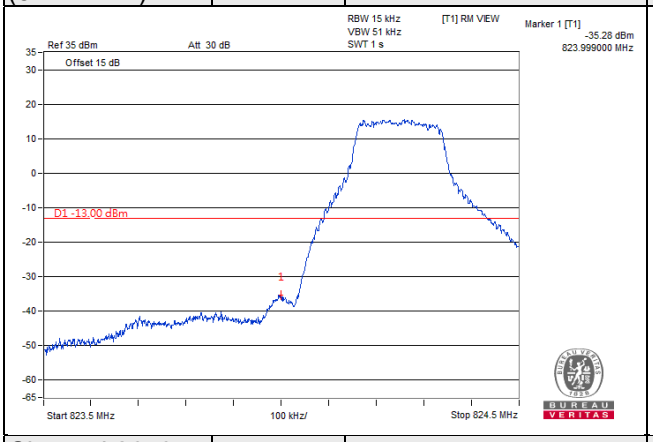
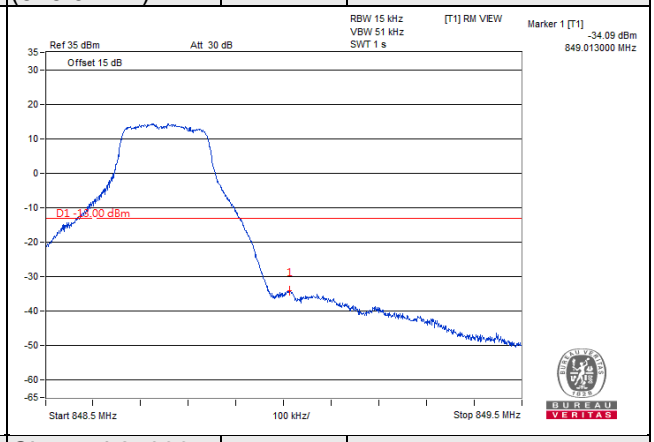
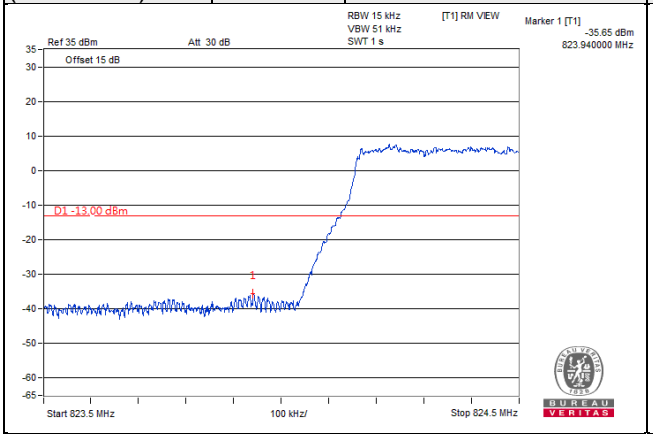
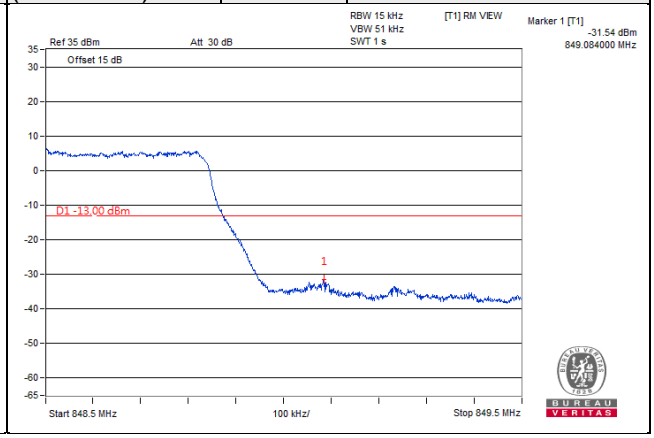
| WCDMA | | | |
|---|---|---|---|
| Channel | 4132 (826.4MHz) | Channel | 4233 (846.6MHz) |
|  |  |
| HSDPA | | | |
| Channel | 4132 (826.4MHz) | Channel | 4233 (846.6MHz) |
|  |  |
| HSUPA | | | |
| Channel | 4132 (826.4MHz) | Channel | 4233 (846.6MHz) |
|  |  |

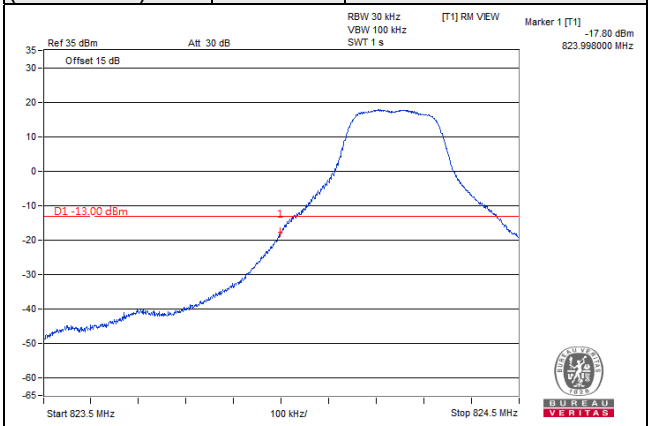
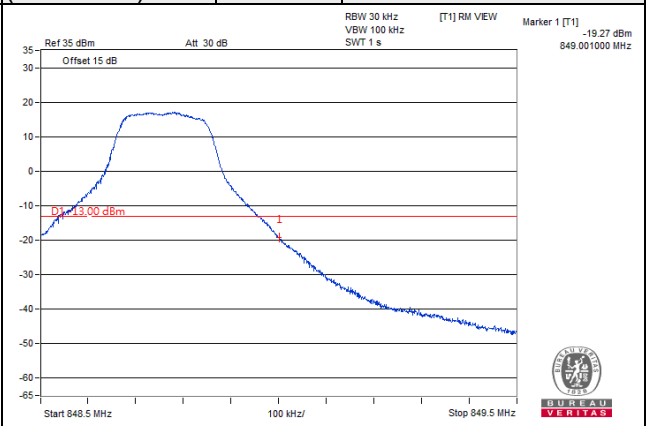
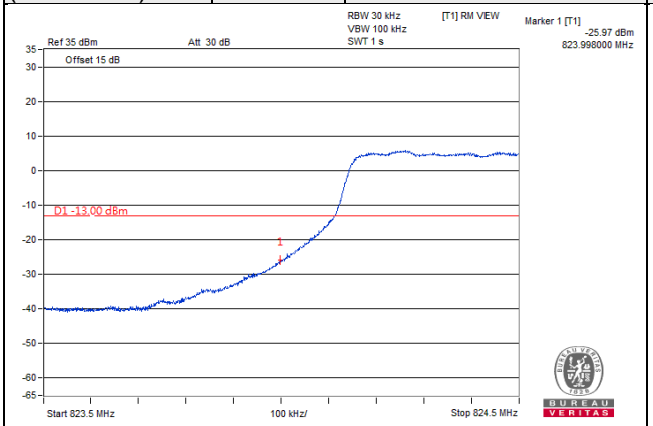
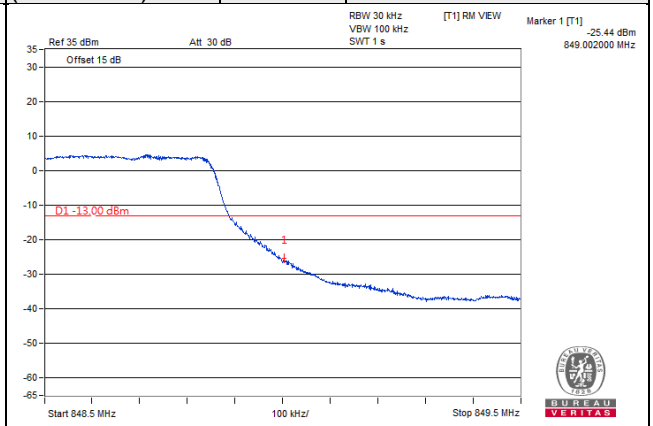
| LTE Band 5, Channel Bandwidth 1.4MHz | | | | | |
|---|---|---|---|---|---|
| Channel 20407 (824.7MHz) | QPSK | 1 RB / 0 RB Offset | Channel 20643 (848.3MHz) | QPSK | 1 RB / 5 RB Offset |
|  | | |  | | |
| Channel 20407 (824.7MHz) | QPSK | 6 RB / 0 RB Offset | Channel 20643 (848.3MHz) | QPSK | 6 RB / 0 RB Offset |
|  | | |  | | |

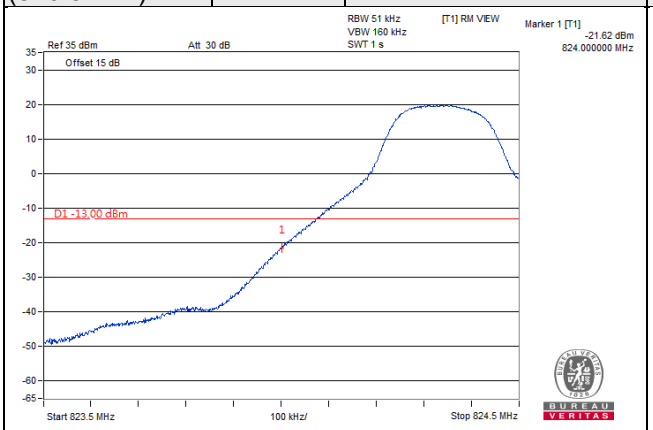
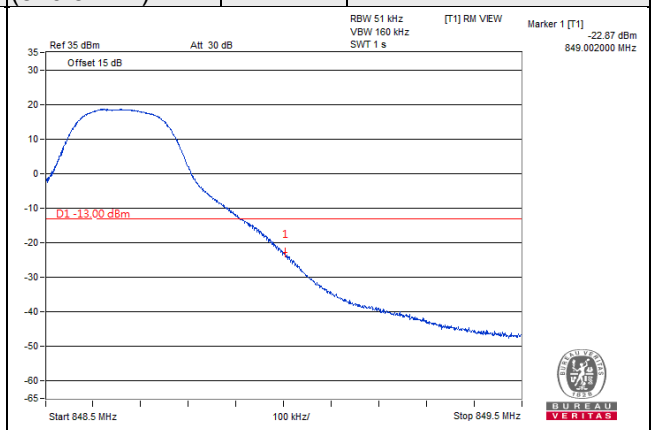
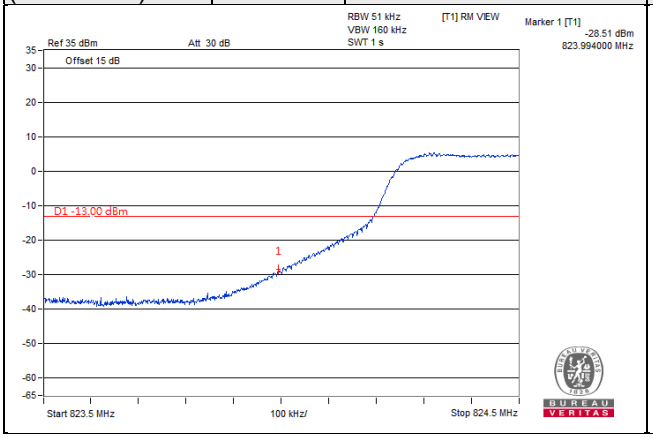
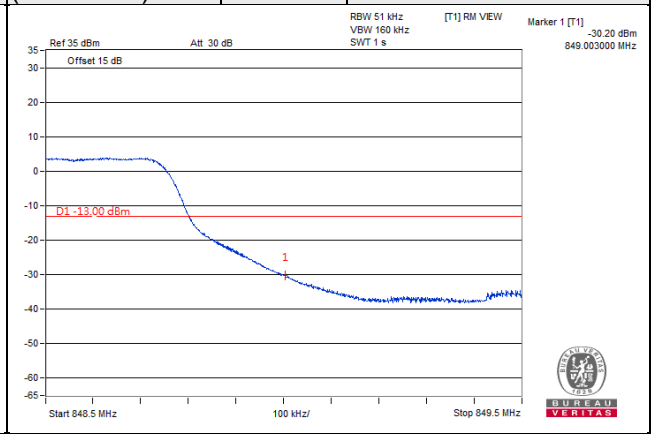
| LTE Band 5, Channel Bandwidth 3MHz | | | | | |
|---|---|---|---|---|---|
| Channel 20415 (825.5MHz) | QPSK | 1 RB / 0 RB Offset | Channel 20635 (847.5MHz) | QPSK | 1 RB / 14 RB Offset |
|  | | |  | | |
| Channel 20415 (825.5MHz) | QPSK | 15 RB / 0 RB Offset | Channel 20635 (847.5MHz) | QPSK | 15 RB / 0 RB Offset |
|  | | |  | | |

| LTE Band 5, Channel Bandwidth 5MHz | | | | | |
|---|---|---|---|---|---|
| Channel 20425 (826.5MHz) | QPSK | 1 RB / 0 RB Offset | Channel 20625 (846.5MHz) | QPSK | 1 RB / 24 RB Offset |
|  | | |  | | |
| Channel 20425 (826.5MHz) | QPSK | 25 RB / 0 RB Offset | Channel 20625 (846.5MHz) | QPSK | 25 RB / 0 RB Offset |
|  | | |  | | |

| LTE Band 5, Channel Bandwidth 10MHz | | | | | |
|---|---|---|---|---|---|
| Channel 20450 (829.0MHz) | QPSK | 1 RB / 0 RB Offset | Channel 20600 (844.0MHz) | QPSK | 1 RB / 49 RB Offset |
|  | | |  | | |
| Channel 20450 (829.0MHz) | QPSK | 50 RB / 0 RB Offset | Channel 20600 (844.0MHz) | QPSK | 50 RB / 0 RB Offset |
|  | | |  | | |

| LTE Band 26, Channel Bandwidth 1.4MHz | | | | | |
|---|---|---|---|---|---|
| Channel 26797 (824.7MHz) | QPSK | 1 RB / 0 RB Offset | Channel 27033 (848.3MHz) | QPSK | 1 RB / 5 RB Offset |
|  | | |  | | |
| Channel 26797 (824.7MHz) | QPSK | 6 RB / 0 RB Offset | Channel 27033 (848.3MHz) | QPSK | 6 RB / 0 RB Offset |
|  | | |  | | |

| LTE Band 26, Channel Bandwidth 3MHz | | | | | |
|---|---|---|---|---|---|
| Channel 26805 (825.5MHz) | QPSK | 1 RB / 0 RB Offset | Channel 27025 (847.5MHz) | QPSK | 1 RB / 14 RB Offset |
|  | | |  | | |
| Channel 26805 (825.5MHz) | QPSK | 15 RB / 0 RB Offset | Channel 27025 (847.5MHz) | QPSK | 15 RB / 0 RB Offset |
|  | | |  | | |

| LTE Band 26, Channel Bandwidth 5MHz | | | | | |
|---|---|---|---|---|---|
| Channel 26815 (826.5MHz) | QPSK | 1 RB / 0 RB Offset | Channel 27015 (846.5MHz) | QPSK | 1 RB / 24 RB Offset |
|  | | |  | | |
| Channel 26815 (826.5MHz) | QPSK | 25 RB / 0 RB Offset | Channel 27015 (846.5MHz) | QPSK | 25 RB / 0 RB Offset |
|  | | |  | | |